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LECTURE.

NERVOUS DYSPEPSIA.

A clinical lecture delivered in Rush Medical College.

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Gentlemen:—You have recently had opportunities for witnessing the effects of inflammation of the mucous coat of the stomach in several patients who have exhibited, with varying degrees of severity, the symptoms of acute and chronic gastritis. This morning I wish to call your attention to a case that illustrates another form of gastric disturbance—nervo-muscular dyspepsia. It has been taught by the dominant school of pathologists that such disturbances of digestion are always due to catarrhal gastro-enteritis. But the opinion has long been held, and is gaining ground, that in certain cases the disorder of digestion is dependent upon alterations in the nervous system, and that inflammation takes little or no part in its causation. This is apparently true of the gastric crises of tabes dorsalis; though, in default of an autopsy, it is always possible to imagine the existence of a latent inflammation that is only prominent during a paroxysm of gastric disturbance. But, on the whole, it seems more likely that the relation in such, and in similar cases, is analogous to what is sometimes observed in the laryngeal cavity when its muscular apparatus is attacked by muscular rheumatism, producing hoarseness or complete aphonia without actual inflammation of the overlying mucous membrane until a day or two after the beginning of recovery from the muscular disorder. In like manner severe pain and disordered secretion may occur in the gastro-intestinal canal without manifestation of the ordinary symptoms of inflammation until after the beginning of digestive disturbance.

Nervo-muscular dyspepsia may therefore be defined as a complex of symptoms, dependent chiefly upon a disordered condition of the nervous system. The history of the patient before you will amply illustrate this proposition. He is a thin and angular person, about 45 years of age, who from boyhood has been engaged in sedentary and intellectual pursuits. He was an unusually good scholar while a student in the public schools. He was subsequently employed as a general utility man in connection with a country newspaper, to which he occasionally contributed an effusion of his own. Then he studied law in a night-school, and tried to get practice in a large city, but broke down in the attempt. After this experience he was for a number of years employed as a copyist in a government office. He could never afford to take a wife, but admits occasional excursions on the street, and probably rather frequent masturbatory excesses. He, however, has thus far escaped syphilitic infection, and denies having had gonorrhea. He is almost totally abstinent from alcohol, but is an almost constant smoker, latterly using a pipe instead of cigars, which he can no longer afford to purchase. For three or four years he has been "down on his luck"—out of employment part of the time, and continually harrassed by debt and its accompanying trials. Naturally gifted with good health, his elastic temperament has long preserved him from serious disease, but during the past year he has lost vigor, is depressed in spirits and suffers with frequent pain in the epigastric region. This pain, however, is not aggravated by taking food. On the contrary, it is for a time quite abolished after each meal, and recurs about three hours after eating, when the stomach is nearly or quite empty. A glass of milk and one or two crackers will then restore comfort again. Sometimes he is awakened in the night with similar sensations of distress, so that he has learned to carry a crust of bread to bed with him, for use before morning. On examination of the gastric juice, free hydrochloric acid is found to be present in more than the ordinary proportion. Other acids are insignificant in quantity, and cause no considerable difficulty. The gastric contents that are obtained with the aid of the syphon after a test meal are simply the remains of that meal alone, showing that the stomach is capable of emptying itself into the duodenum within four or five hours. Muscular atrophy of the stomach can be therefore excluded.

But here is another patient who, if subjected to this test, furnishes the débris of one or two previous repasts in addition to the substances derived from the test meal. He presents the usual symptoms of chronic catarrhal gastritis, and on rising in the morning splashing sounds can be heard in his stomach if he be vigorously shaken. Inflation of his stomach places its greater curvature a little below the umbilicus. His bowels are constipated, and he suffers frequently with intestinal flatulence. In his gastric juice there is deficiency, but not complete absence, of free hydrochloric acid. In short, without going farther into particulars, we may say that he is a victim of gastric dilatation not dependent upon malignant disease, but accompanied by frequent attacks of pain and gastro-intestinal uneasiness, which are only less severe than the paroxysms of gastralgia that frequently occur as a consequence of chronic gastritis.

Between these types of neuro-muscular distress many shades of disorder may be discovered, but they can be all grouped into a few classes. An attempt has been made to form a classification based upon the chemic qualities of the gastric juice with reference to the relative quantity of hydrochloric acid that may be present. But the amount of acid thus present in the juice is quite variable, while the nervous phenomena are always predominant, and should be principally considered both in the diagnosis and in the treatment of nervous dyspepsia. The relative acidity and

catarrhal condition of the gastric contents are subordinate factors that must receive due consideration, but may not be made preëminent. It is, accordingly, advisable to regard nervous dyspepsia as comprising those digestive disturbances that are chiefly dependent upon disorder of the nervous system, and are characterized by symptoms of nervous derangement. Like all other nervous phenomena, therefore, there may be either exaltation, depressions or incoördination of function, giving rise to increase, or reduction, or perversion of sensation, muscular movement, circulation and secretion in the stomach. Indigestion may be, therefore, either painful or painless; it may be hurried beyond measure, or it may be retarded by atonic conditions of the muscular fibers in the gastro-intestinal wall; there may be excessive hyperemia and inordinate secretion in the mucous membrane, or the contrary condition may obtain; and finally, as a result of incoordination of nervous functions, the quality of the gastric juice, in the matter of digestive ferments and hydrochloric acid, may exhibit considerable variation from the normal standard.

Obviously, a chemic examination of the gastric juice is needful for the determination of these different qualities of the digestive fluids. Dyspepsias have been, therefore, subjected to a chemic classification based upon the relative quantities of hydrochloric acid that can be demonstrated by analysis. In certain cases the acid is present in excess (hyperchlorhydria), while in others it is deficient (hypochlorhydria), or entirely absent. But in a considerable number of instances clinical observation discovers evidence of disordered digestion without any notable deviation from the normal acidity of the gastric juice. So complicated is the web of symptoms that it is impossible to arrange all cases under a few simple species, like animals in a menagerie. Each patient exhibits individual symptomatic peculiarities, like the numerous varieties presented by certain plants whose species shade into each other after a fashion that renders exact classification almost impossible. But, for the sake of convenience, we may recognize three principal groups into which nervous dyspepsias may be divided —always, however, remembering their susceptibility to variation, and their consequent liability to pass from one group into another, or even to merge themselves among the host of inflammatory disorders in which nervous phenomena occupy a comparatively subordinate position. These three groups may be conveniently considered in succession.

SIMPLE NERVOUS DYSPEPSIA.

This form of digestive disorder is most frequently encountered among neuropathic subjects with rickety antecedents, or among members of the arthritic family. Retarded dentition, profuse sweating during sleep, local spasms, laryngismus stridulus, and intellectual precocity are of common occurrence in the early life of these patients. As the years advance, many of them become victims of eczema, dandruff, early whitening of the hair, premature baldness, bronchitis, asthma, palpitation and irregularity of the heart, neuralgia, gallstones, renal calculi, varicose veins, hemorrhoids, diabetes, polyuria, obesity, rheumatism and gout. Catarrhal conditions of the alimentary canal are often experienced, especially in the childhood and old age of such persons. Dyspepsia thus inaugurated frequently is associated with or replaces the phenomena of muscular and nervous rheumatism. It is easily induced by fatigue of mind and body and is one of the most common causes of persistent neurasthenia.

The general health and appearance of the patient exhibit little alteration in this form of dyspepsia, unless the function of the small intestine be seriously hindered. There is frequent complaint of epigastric uneasiness after eating, and this is accompanied by a feeling of distension in the stomach, and by eructations of tasteless and odorless gas. Sometimes there is a sensation of impediment in the act of respiration "as if the breath would not go down to the bottom of the lungs." The head aches; the countenance is flushed; the bowels are constipated, and hemorrhoids often exist. Shortly after eating, considerable pain may be experienced; it is a dull, vague sensation of distress that is not definitely located, but is felt with varying severity throughout an ill-defined region beneath the diaphragm. Sometimes the patient experiences vertigo, or feels as if a band compressed the cranium above the eyebrows; occasionally the temporal arteries beat violently, and the corresponding veins are distended with blood. In certain cases it is impossible to lean forward without exciting severe pain in one or both sides of the head. There may be a feeling of weight or pressure in the occipital region, and it is not an uncommon event for the patient to hear a cracking sound in the back of the neck when the head is rotated upon the axis, especially on turning from side to side in bed. Usually there is great depression of spirits, and a tormenting fear of impending evil. The feelings exhibit great instability, passing rapidly from an extreme of vivacity to the profoundest depths of despair.

If the abdomen be examined an hour or two after a meal, considerable gaseous distension of the stomach and intestines will be discovered. Sometimes a succussion sound is audible in the stomach if the body be violently shaken. The differential diagnosis between simple distension of the stomach caused by nervous dyspepsia and permanent dilatation of the organ can be established by examination before breakfast, at which time succussion sounds can not be evoked in cases of temporary distension; whereas they can be always demonstrated when there is persistent dilatation of the stomach.

Palpation of the abdominal wall, in nervous dyspepsia, seldom indicates any extensive tenderness or special uneasiness under pressure. Frequently, however, a moderate degree of tenderness can be detected just below the tip of the ensiform cartilage, and in rheumatic subjects the upper portion of the recti muscles is often sensitive under manipulation.

Provided that intestinal digestion be not seriously hindered, the amount of free hydrochloric acid in the gastric juice may vary considerably without materially affecting the nutrition of the patient. Mere chemic examination of the gastric juice, therefore, affords little information regarding the totality of the digestive process. Of far greater importance is the condition of the nervous system. So long as actual dilatation of the stomach does not exist there will be no extraordinary delay in the passage of food into the intestine, there will be little if any fermentation, and no remarkable failure of health, even though the amount of free hydrochloric acid in the gastric juice should fall below the normal standard.

Such disturbances of digestion as are present are not confined to the stomach alone; they also involve the intestinal canal. In many instances there is some

distension of the colon; constipation and hemorrhoids afford evidence of intestinal and hepatic disorder Occasionally the phenomena of pseudo-membranous enteritis make their appearance.

NERVOUS DYSPEPSIA WITH EXCESSIVE SECRETION OF HYDROCHLORIC ACID.

In certain cases of nervous dyspepsia accompanying neurasthenia the secretory nerves that should regulate the formation of gastric juice do not exert their normal coördinative influence, and there is an excessive production of hydrochloric acid. Sometimes the acid thus furnished is sufficient to be a veritable cause of inflammation. Such excessive secretion is not unusual during the paroxysms of vomiting that constitute the gastric crises of tabes dorsalis.

In typical cases of this variety of dyspepsia great pain, beginning two or three hours after a meal, is experienced in the epigastric region. Considerable relief may be procured by swallowing milk, or an aqueous solution of an alkaline salt. It is completely removed by the ordinary meals, which, virtually, are equivalent to the administration of a full dose of alkaline salts; but the cessation of pain is only temporary, and suffering is renewed as soon as the stomach is empty again. In this way sleep is often disturbed after midnight by a burning sensation, or by vague feelings of uneasiness in the epigastrium, sometimes radiating into the interscapular region. Vomiting may occur, and it is sometimes voluntarily excited by the patient, who has learned how much relief may be obtained through evacuation of the stomach. Similar relief is afforded by irrigation of the gastric cavity. In many cases, however, there is absence of nausea, but the acid contents of the stomach are eructated, causing an intensely burning sensation in the esophagus and fauces. Such patients are thirsty; they often have a craving appetite that impels them to its frequent gratification; and they instinctively prefer animal food, because it is digested more easily than vegetable food. Usually, there is considerable emaciation; the skin assumes an earthy hue; nervous exhaustion is indicated by irritability, fatigue, restlessness and inability to sleep. Many of the sufferers are despondent and hypochondriacal to the last degree.

Milder forms of the disease are less painful. There is merely a sensation of epigastric uneasiness beginning within several hours of eating and arrested by the following repast. These patients desire food at short intervals, and if the usual mealtime is passed without taking nourishment they experience a feeling of exhaustion with distress at the pit of the stomach, often accompanied by a throbbiug headache and vertigo. They are generally nervous, irritable, neuralgic and predisposed to arthritic disorders. The bowels are constipated, though occasionally there is obstinate diarrhea—especially in the night or early in the morning—that does not yield to astringents and opiates. Sometimes tenderness on pressure is felt over the pyloric region, and percussion indicates distension of the stomach. Actual dilatation is not to be presumed unless a succussion sound can be obtained in the morning before food has been taken. Catheterization of the stomach yields a liquid that is strongly acid, ropy and of a yellowish color. By washing out the stomach at bedtime, and on the following morning removing the liquid contents of the organ before food has been taken, it is easy to determine the fact of hypersecretion and gastric dilatation if hydrochloric acid be present.

In a certain proportion of these cases the patient is tormented by repeated attacks of vomiting, which may continue for several days together. Such attacks are frequently induced by intellectual fatigue, and are an expression of nervous disorder accompanied by headache, pain in the stomach and nausea; all of which may be relieved by vomiting the excessively acid contents of the stomach or by their neutralization with an alkaline solution.

NERVOUS DYSPEPSIA WITH DIMINISHED SECRETION OF HYDROCHLORIC ACID.

In the third variety of nervous dyspepsia the symptoms do not materially differ from those which are experienced in the previous form; but the amount of hydrochloric acid, both free and combined, is considerably reduced, or may be temporarily absent. Fermentation consequently occurs in the contents of the stomach, liberating various organic acids and acrid substances. In such cases there is loss of appetite, pain in the epigastric region, distressing eructation and frequent vomiting. The stomach is distended with gas, and succussion sounds are distinctly audible; pain is felt soon after eating, but it is usually less severe than the suffering that is caused by an excess of hydrochloric acid. In many cases there is regurgitation of bile into the stomach, hindering gastric digestion and adding to the discomfort of the patient who loses flesh and acquires a cachectic hue suggestive of cancer of the stomach.

Evidently, these forms of dyspepsia can be differentiated only by the aid of chemical analysis. The mere presence or absence of free hydrochloric acid can be readily determined by the ordinary color tests; but for an accurate diagnosis a quantitative analysis is required. The prognosis depends upon the duration of the disease and its severity. Mild and recent cases occurring in young subjects, usually recover, but dilatation of the stomach, and excessive secretion of hydrochloric acid are unfavorable symptoms. In the severer forms there is reason to fear the passage from simple nervous excitement to actual inflammation, ulceration, or malignant disease.

The indications for treatment are three-fold: 1, to relieve pain; 2, to correct nervo-muscular disorder, and 3, to rectify the secretions.

1. Uneasy sensations occurring when the stomach is empty, or when it contains an excessive quantity of hydrochloric acid, may be temporarily relieved by the administration of milk, or water containing bicarbonate of sodium. But when there is intense gastralgia nothing less than hypodermic injections of morphin and atropin will give relief. Moderate pain may be suppressed by the use of Hoffmann's anodyne,cannabis indica, cocain, hyoscyamus, or a saturated aqueous solution of chloroform. This last remedy is the most prompt and efficient of all, except morphin. In every case of severe pain the stomach should be thoroughly evacuated by an hypodermic injection of one-tenth of a grain of apomorphia. A large poultice, into which have been stirred a drachm each of chloroform and tincture of opium, should be laid over the whole abdomen and lower half of the thorax. A cathartic should be administered as early as possible; it may consist of ten grains of calomel with five grains of bicarbonate of sodium, to be followed four hours later by an ounce of castor oil. Sometimes considerable relief

may be derived from copious draughts of hot water. Solid food should not be taken until the acute symptoms have yielded to treatment and rest.

2. Inefficient muscular contraction in the walls of the stomach and intestines demands the use of nux vomica, ipecac, massage, electricity, injections of hot water into the colon, and stimulant laxatives. Nux vomica is a better tonic than strychnin; it may be given in doses of five to ten drops of the tincture, a quarter of a grain of the extract, or half a grain of the powdered nut, after each meal. Ipecac stimulates the secretion of bile, and is especially useful when there is gastro-intestinal flatulence after eating; it should be given in doses of one-tenth of a grain, associated with nux vomica, piperin, ginger, and other aromatic stimulants, as in the well-known pill of Fothergill, which may be thus modified:

℞. Pulv. ipecac . . . . . gr. 1-10
Ext. nuc. vom. . . . . gr. ¼
Pulv. piper. nig . . . . . .
Ext. gentian . . . . . āā gr. i
Fiat pil. No. 1. Sig. One such pill after each meal.

Aloin in appropriate quantity may be added when there is constipation; and an occasional dose of blue mass and colocynth is often useful.

3. For the chemic rectification of the secretions, when there is excessive production of hydrochloric acid, the patient must abstain from alcoholic beverages and highly seasoned food. Mastication must be slowly and thoroughly performed. Starchy and saccharine substances should not be eaten; milk, eggs, peptonized meat powders, minced meat, tender steak, and other nitrogenous articles of diet should constitute the bulk of the food. When the excess of acid is present during the period of digestion alone, causing pain as the stomach becomes empty, sodium bicarbonate may be given in doses of five to twenty grains about three hours after each meal. If the bowels be constipated an equal quantity of Husband's magnesia may be added to each dose. When the stomach is continually charged with hydrochloric acid it will be necessary to increase the dose of sodium bicarbonate to four or six drachms a day. Vichy water, lime water, lithia water, and Murray's fluid magnesia may also be used as antacids. When there is evident dilatation of the stomach with stagnation of its contents, the syphon should be employed, in order to remove the irritating liquids. In default of such apparatus, the older physicians gave emetics of lobelia with good results.

When, without dilatation of the stomach or stagnation of its contents, there is a deficiency of hydrochloric acid in the gastric juice, ten or fifteen drops of the dilute acid may be given in a teacup of hot water after each meal. An equally good result follows the similar use of the other mineral acids; hence the extensive popularity of Horsford's Acid Phosphate, and kindred acid preparations. But it must be noted that acids and pepsin and other digestives so often administered are not curative of dyspepsia. They are merely palliative, and give only partial and temporary relief. The disease can be overcome only by the removal of its cause, whatever that may be. In the vast majority of cases it is an exhausted state of the nervous system that underlies the disorder, and the patient must reform his whole course of life before he can be cured.

Dilatation of the stomach, and an excessive acidity due to fermentation and the production of the organic acids in its contents require daily irrigation of the stomach, and the administration of salol, salicylic acid or beta-naphthol, before meals. In mild cases much benefit is derived from the long continued administration of small doses of the alkalin salts. Potassium citrate or acetate or carbonate, with sodium bicarbonate, associated with a bitter tonic like nux vomica, compound tincture of gentian, or the elixir of calisaya bark, electricity, massage and hydrotherapy are indispensable in this class of cases. Change of occupation, change of habits, the attainment of prosperity, long vacations, mountain climbing, sea-voyaging, and cool baths are far more effectual than the most elaborate medication.

ORIGINAL ARTICLES.

PRIMARY PAPILLOMA AND PRIMARY CARCINOMA OF THE FALLOPIAN TUBE.

Read at the Meeting of the Chicago Pathological Society, April 12, 1897.

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The two cases which I present here were operated on by Dr. T. J. Watkins, who kindly offered them to me for pathologic examination. They are of great clinical as well as pathologic interest, one case indeed being unique in its kind. Only six cases of primary papilloma of the tube are contained in the literature, the present being the seventh case. Of primary carcinoma of the tube the tables of Doran[1] and of Saenger[2] contain nineteen cases, the present being the twentieth.

I. Primary papilloma of the tube. Secondary papilloma of both ovaries. Repeated vaginal drainage for purulent salpingitis, at last salpingo-oöphorectomy by laparotomy. Recovery. Good health fifteen months after the operation.

Clinical history.—Patient, 34 years old, gives a history of inflammatory disease of the pelvic organs after a miscarriage in her twenty-ninth year, from which she recovered perfectly. In her thirtieth year she suffered some violent injury to her left inguinal region. This was followed by "inflammation of the ovary," which remained painful until operation. The diagnosis was pyosalpinx and in June, 1894, the swelling in the pelvis was opened through the vagina. The tumor evacuated a quantity of pus. In November, 1894, the tumor had to be opened again and patient wore a drainage tube for eight months. In August, 1895, third operation. Patient wore the drainage tube for two months after she left the hospital. At last in January, 1896, laparotomy was performed and the appendages were removed. The patient recovered uneventfully. She was seen a few days ago by Dr. Watkins and was found to be in perfect health. She does not menstruate and has no leucorrhea. The uterus is atrophied and freely movable.

Macroscopic description of specimens.—Left side: Ovary not enlarged (35 x 26 x 20 mm.). Its surface is covered in several places by wart-like excrescences, which in some places sit on the ovary with a broad base, while in others they are distinctly pedunculated. The tube is normal externally with the exception of a slight thickening of its isthmic part. The fimbriated end is open. Cross sections through the tube show nothing abnormal. The ovary contains on sec-

tions small cysts, most of which have smooth walls, while some contain small papillary growths. (Fig. 1.)

Right side: Ovary not enlarged (40 x 25 x 30 mm.). The portion of the tube removed is 6 cm. long; the fimbriæ are not visible; the abdominal end is dilated, while the uterine end is of normal size. A part of the surface of the ovary is covered with wart-like excrescences, a few of which are also found on the surface of the tube. An opening in the ovary, which was probably made in the course of the treatment, leads into a small cavity the size of a hazel-nut, which is invested with an abscess-membrane and contains some pus. This cavity also contains numerous papillomatous growths. The dilated tube, which contains a small quantity of hemorrhagic fluid, communicates with the cavity in the ovary through a narrow opening, toward which the folds of the tube converge and which represents the abdominal orifice of the tube. The cavity of the tube is studded with papillomatous growths, which extend throughout the external half of the tube. (Fig. 2.)

Both ovaries and tubes are covered with many adhesion-membranes, but there are no papillomas in or on these membranes.

Microscopic structure.—The microscopic structure of the papillomas is alike in ovaries and tube. One layer of long slender columnar epithelium covers the connective-tissue framework of the papillæ, which

FIG. 1.—Papilloma of left ovary (Case 1). Piece of ovary removed to show cysts in ovary.

arise from the mucous membrane and branch out into more and more delicate ramifications. The papillæ of both ovaries and tubes contain numerous small gritty bodies with concentric striation, calcareous concretions, which are almost normal in all sorts of papillomatous growths.

The wall of the tube with papillomas is thin and shows a few small areas of round-cell infiltration. Toward the mucous membrane there are a few cyst-like epithelial formations, which are even found outside the circular muscular layer. These cysts, however, do not contain papillomatous masses nor solid epithelial growths. They are lined by one single layer of low columnar epithelium. The cysts are round or roundish, sometimes with slight constrictions. I have not been able to discover an endothelial lining around them, but will not lay much stress on this fact, as the state of preservation of the specimen was very bad when I examined it.

The uterine end of each tube contains adenomyomatous structures. These are more pronounced and extensive on the side of the papillomatous tube than in the healthy tube. The papilloma has not affected the adenomyoma, the epithelium of which is more or less columnar with well-pronounced ciliæ, while the epithelium of the papilloma presents no ciliæ. There is no communication to be found between the adenomyomatous tubules and the tubal cavity.

The little cysts of the left ovary which do not contain papillomas are lined with a simple low cuboidal epithelium and look like simple hydropic follicles. No corpus luteum cysts are found. The little cysts which contain papilloma prove to be of a different structure. They are invested with a columnar epithelium, which is in direct continuity with the epithelium of the papillomas filling the cysts. In several places the communication of the cysts with the surface can be observed consisting in a narrow cleft lined with the same epithelium as the papilloma itself. It appears unlikely that the growth started in the substance of the ovary. I believe rather that it penetrated from the surface as the development of the neoplasm on the surface is much more extensive and much more pronounced.

Review.—We are now confronted with the question whether the tumor originated in the tube or in the ovary. The same question arose in one of the six cases of papilloma of the tube contained in the literature. This case was observed by Doran,[1 3] who des-

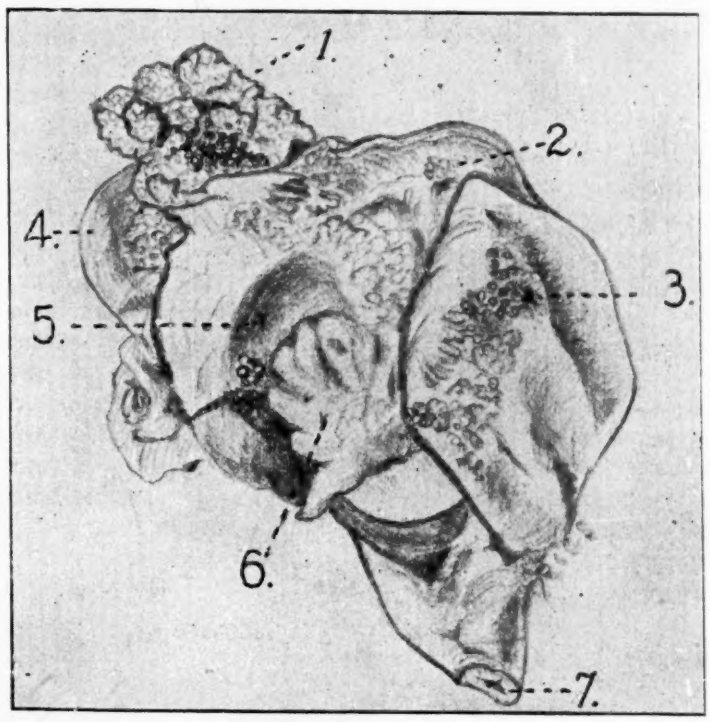

FIG. 2.—Papilloma of right tube and ovary (Case 1). Tube and ovary cut open. 1, papilloma on surface of ovary; 2, papilloma in cavity of tube; 3, papilloma on surface of tube; 4, ovary; 5, abscess cavity in ovary; 6, abscess-membrane; 7, uterine end.

ignates it as a case of papilloma of the tube. Where ovary and tube present papilloma the primary seat of the tumor must be assumed to be in the tube if the ovary has as in our case remained small in size, as our experience leads us to believe that ovarian papillomas belong among the most rapidly growing tumors of the ovary. This reason makes it at least likely that the papilloma in our case originated in the tube and spread on to the ovaries. This event was facilitated by the therapeutic efforts which gave the papilloma of the tubal cavity the opportunity of reaching the surface of the pelvic organs. The absence of ascites in this case also tends to exclude the ovaries as primary seat of the tumor, as ovarian papilloma is almost invariably accompanied by ascites.

The history of inflammatory symptoms is usual in cases of papilloma, so that Doran,[1] and Saenger and Barth[2] attribute direct etiologic importance to the inflammation. The papilloma of the tube was one-sided in five out of the six cases published and was so

in our case. Four of the reported cases survived the removal of the tumor and are reported well three, four, four and sixteen years after the operations. To this I can add the present case, which Dr. Watkins saw a few days ago in perfect health, that is to say, fifteen months after the operation.

II. Primary carcinoma of both Fallopian tubes. Adenomyoma of both Fallopian tubes. Myofibroma of the body of the uterus. Numerous metastases of the carcinoma. Abdominal salpingo-oöphorohysterectomy. Speedy recurrence and death.

Clinical history.—Patient, 45 years old, has always enjoyed good health; had one child twenty-three years ago; no miscarriages. She came to the hospital on account of difficult urination and pain in the pelvis. These symptoms had begun about ten days before patient entered the hospital. The operation was performed on Sept. 1, 1896. Uterus, tubes and ovaries were removed; the operation was made difficult by numerous and strong adhesions. Patient recovered and was discharged on October 6. She returned to the hospital on Dec. 13, 1896, with a large tumor extending from Douglas' pouch to the umbilicus. An effort to remove this proved the tumor to consist of a soft mass resembling granulation tissue, which could not be entirely removed. Discharged from the hospital Jan. 3, 1897, died a few weeks later.

Microscopic description.—(See Fig. 3.) Uterus 88 mm. long in all, the removed part of the cervix 12 mm. long. Wall of the fundus 10 mm. thick. Middle of anterior wall 26 mm. thick. Posterior wall contains a fibroid with well marked capsule. Posterior wall 88 mm. thick, 16 mm. being the thickness of the uterine muscular tissue, the rest fibroid.

The fibroid (F. Fig. 3) is submucous covered by a very thin layer of mucous membrane. The latter is thin throughout the cavity with the exception of one flat elevation (E. Fig. 3) on the left anterior side of the cavity. The fibroid presents the usual arrangement of bundles and resembles in shape a ball compressed in the longitudinal diameter of the uterus. The uterine cavity (C C Fig. 3) is narrow, cleft-like; measured over the fibroid it is 84 mm. long. Right and left broad ligaments are easily recognizable. Each uterine horn is formed by a nodule (N. Fig. 3), which has 15 mm. antero-posterior diameter on the left and 17 mm. diameter on the right side. An incision into the right nodule shows three small cavities filled with colloid masses. Nothing similar on left side. On the left half of the fundus are two subserous nodules the size of lentils, slightly lobated; a larger one (17 x 10 x 5 mm.) is found on the posterior surface which presents numerous and firm masses of adhesions. A nodule of the same size as the last mentioned is situated on the fundus close behind the nodule of the left uterine horn.

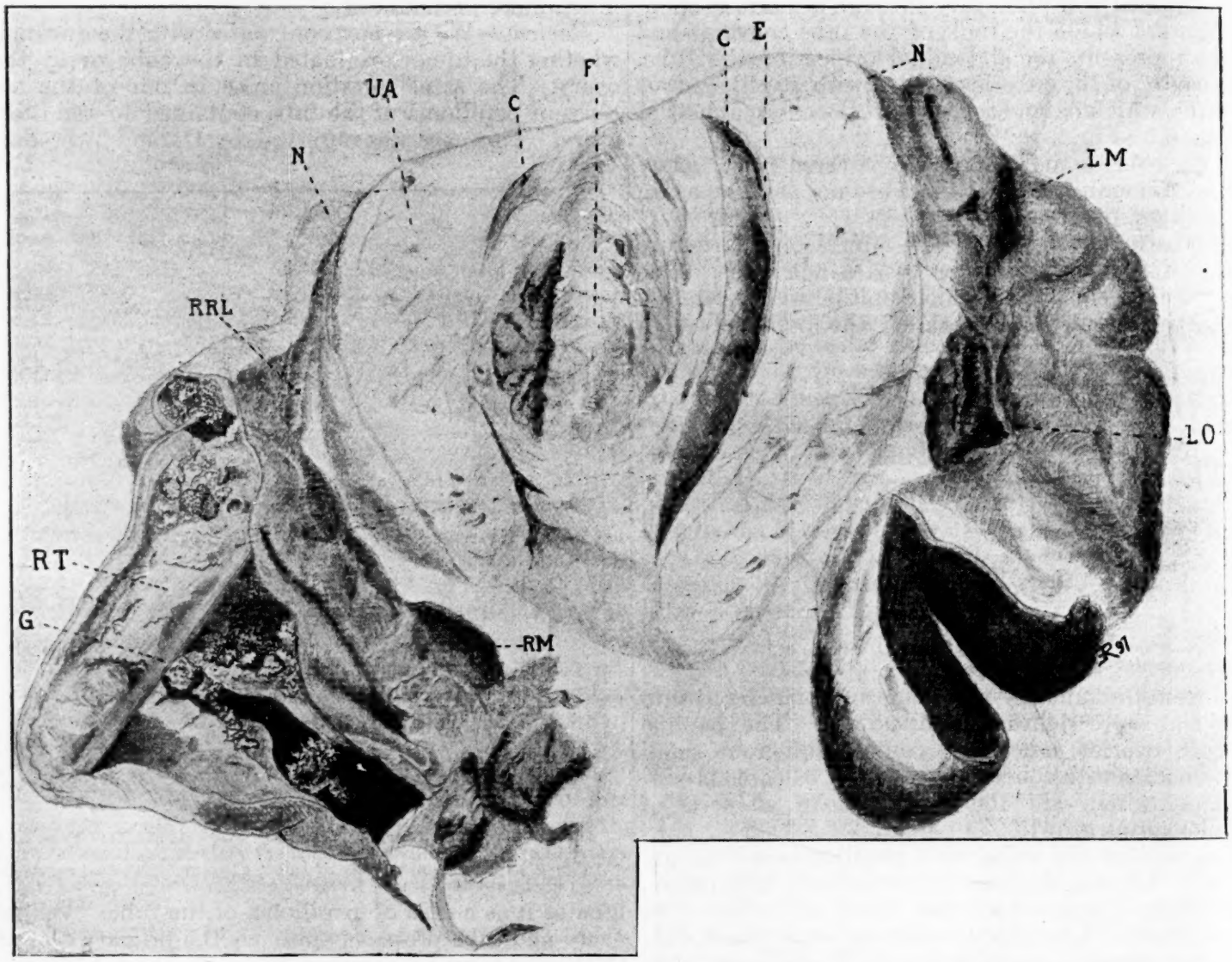

FIG. 3.—Specimen of double papillo-carcinoma of the tubes (Case 2). Anterior view. Uterus cut open through anterior wall. Right tube held open by glass rod, G. Incision in abdominal part of left tube. F, fibroid; C C, uterine cavity; E, elevation of uterine mucosa; UA, anterior wall of uterus; N N, nodule on uterine horn of each side; RRL, right round ligament; RT, right tube; RM, metastatic tumor in adhesion-membranes on right side; LO, left ovary; LM, tortuous elevation (carcinomatous lymphatics, see text).

The length of the right tube measured along its upper border is 260 mm., its largest circumference 180 mm. Just outside the nodule on the uterine horn the tube becomes narrower, then it swells considerably and presents four large convolutions. The anterior side of the tube is with the exception of some adhesion-membranes smooth; the posterior side presents on the lateral four-fifths of its length more or less bulky papillomatous growths. The abdominal end of the tube, which has the large circumference mentioned above, is sharply bent to below and behind so that it touches the isthmic part. The ovary (40 x 30 x 15 mm.) is located between the abdominal and uterine portion of the tube. There is almost no trace of an ovarian ligament, the ovary being almost contiguous with the uterus. The ovary presents a few adhesion-membranes, but no papillomatous masses. On a cross section several corpora lutea and follicles are seen. The cavity of the tube (RT. Fig. 3) contains flat and prominent papillomatous masses, which fill the narrow isthmic part completely while they cause only a thickening of the wall of the abdominal end. The tube is so tortuous that on cross sections of the isthmic part the cavity appears double. The wall of the adominal end is one to three mm. thick, the wall of the isthmic part is double this size. Near the broad ligament the tubal wall of the isthmic portion forms a white mass 5 mm. thick and is covered outside by a stratum of papillomatous masses about 4 mm. thick. Several thick masses of adhesions connect the abdominal portion of the tube with a tumor mass (40 x 40 x 5 mm.) (RM. Fig. 3). On cross section this mass consists of a white substance which contains a central cavity. The cavity presents several wart-like excrescences.

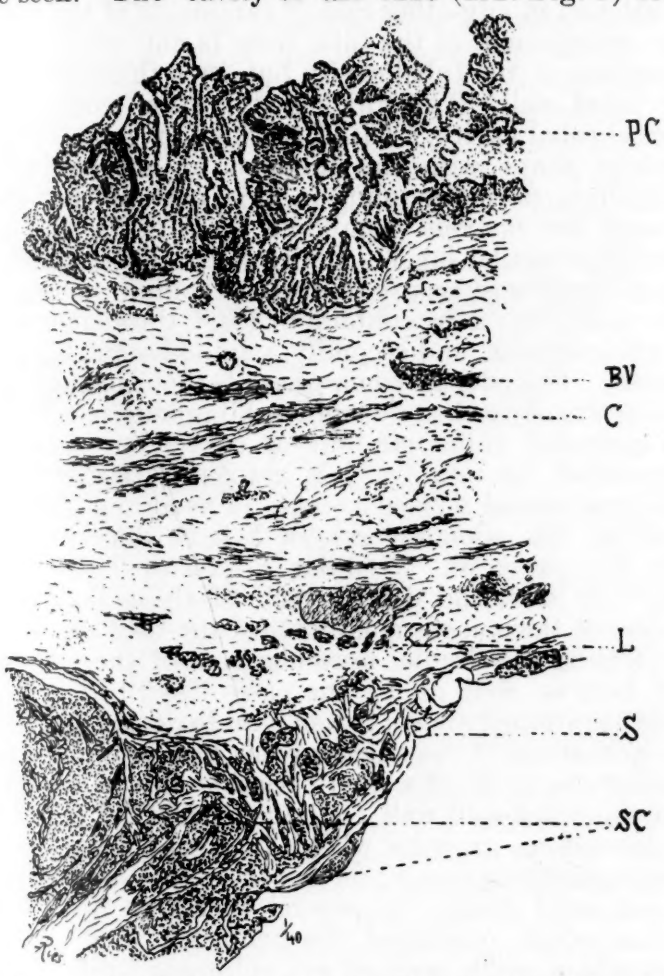

FIG. 4.—Microscopic section of L M, Fig. 3 (Case 2). PC, primary carcinoma of tubal mucosa, the wall of the tube with C circular and L longitudinal muscular layers, and BV blood vessels. S, serous coat of tube with SC solid carcinomatous masses in it.

The left tube, measured along its external border, is 315 mm. long, the largest circumference (165 mm.) being at the abdominal end. Distinct furrows divide the tube outwardly into four convolutions. Near the first furrow, counting from the uterus, the anterior surface of the tube presents a tortuous elevation (L M. Fig. 3) about 30 mm. long and one to two mm. thick, a cross section of which contains a white mass. The anterior and posterior surfaces of the tube are covered with pseudo-membranes. The ovary of this side (LO. Fig. 3) has an ovarian ligament 22 mm. long. The ovary (54x20x18 mm.) contains numerous corpora candicantia and follicles. Cross sections through the nodule on the isthmic part present a thick wall and a cleft-like cavity. Further on the wall of the tube is a pretty homogeneous white mass. It is stained brownish near the cavity. The cavity itself is filled with a blood clot which reaches from the isthmus to the abdominal end. If the blood clot is lifted away from the wall low papillomatous masses are seen everywhere. The wall of the abdominal portion is two mm. thick, near the uterus the wall is five to seven mm. thick.

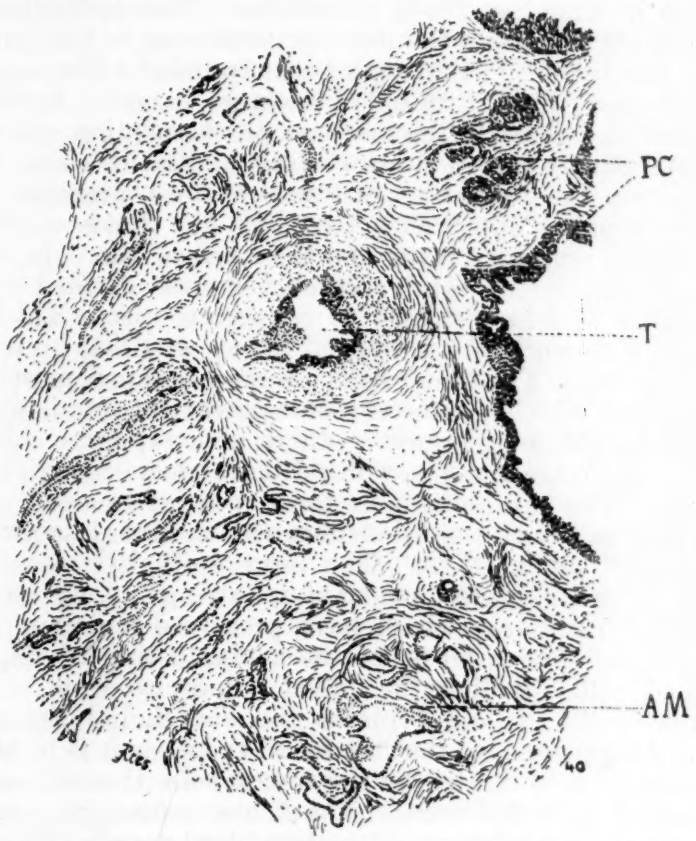

FIG. 5.—Microscopic appearance of nodule N of left side, Fig 3 (Case 2). Section of uterine horn of left side showing tubal cavity T, with its circular muscular layer, the adenomyoma AM. with its muscular tissue, and the carcinomatous masses PC, with papillae and cyst-like formations.

The abdominal ends of both tubes are closed. The right tube contained sero-purulent fluid which escaped during the operation, as the tube burst.

Microscopic description; right tube.—The wall of the tube does not show any remarkable changes, with the exception of some round-cell infiltration along capillary vessels. The mucous membrane presents a multitude of smaller and larger papillary elevations. The elevations consist in the largest part of epithelial masses, while the connective tissue skeleton of the papillæ is scarce, and frequently so crowded with round cells that very few connective tissue cells are visible. The epithelial masses form labyrinthian coils winding in and out, often so close together that no connective tissue whatever remains between them.

The epithelium is arranged in single or multiple layers, mostly in the latter. The individual cells are columnar epithelial cells, some very long and thin, some shorter, almost cuboidal. The larger papillæ contain blood vessels. Small hemorrhagic areas occur in many of the papillæ. The surface is covered with many detached and degenerated cells and cell detritus.

The arrangement of the epithelial cells is not always distinctly papillary. In many places sections contain apparently glandular or cystic formations which, however, are only produced by the knife cutting away recesses between papillæ. The epithelium does not grow downward into the wall of this tube.

The peritoneal coat of this tube shows no pathologic changes in the macroscopically normal portion of the serosa.

Left tube.—The mucous membrane of the narrower part presents the same appearance as the right tube, the papillary growths and the inextricable coils of epithelial formations existing here in the same manner as on the right side. The cavity contains considerable detritus consisting of white blood corpuscles, detached and degenerated epithelial cells and more or less distinct red blood corpuscles. The epithelium does not penetrate the mucous membrane in this part of the tube. The muscular coat contains a few areas of round-cell infiltration of no large extent. In the place mentioned in the macroscopic description where the tortuous elevation resembling a dilated vessel is seen on the tube, the peritoneal surface presents a very striking appearance (see Fig. 4). Between the external muscular layer and the surface there is an accumulation of solid epithelial masses divided by smaller or larger strings of connective tissue which form a network, the meshes of which are filled by the tumor cells. The tumor cells are many-shaped, mostly roundish with large nuclei (some presenting unmistakable karyokinetic figures), others are very large cells with one large nucleus, while still others are real giant cells. The epithelial cells form rounded masses, or appear as rosary-shaped strings with more or less pronounced constrictions. The large epithelial masses are in some places arranged in strings along and around capillaries which have preserved their endothelium. The latter is seen as a single line of flattened cells dividing the blood corpuscles from the tumor cells. In other places the endothelial lining has disappeared, so that the blood space, as it is to be called then, is limited by the tumor cells themselves. Smaller epithelial masses, sometimes containing one or several vacuoles, do not contain blood vessels. They are separated from the surrounding connective tissue by a line of flat endothelial cells; in other places this endothelium is rather cuboidal or even gives rise to small epithelioid buds. Taking all this together, I conclude that these tumor masses are located in lymph spaces, especially those sheathing blood vessels. The importance of this observation with regard to the dissemination of carcinoma by the lymph and blood currents is evident.

A section of this left tube, comprising the insertion of the isthmic part on the broad ligament, shows the papillo-carcinomatous condition of the tube very much like the right tube; hemorrhages, however, being more numerous and covering larger areas than in the other tube. The explanation of these hemorrhages may be found in an obstruction of the venous current, indicated in the sections by the many vessels choked with red blood corpuscles. The peritoneal surface shows some solid carcinomatous nodules resembling those described above, but on a smaller scale. The parovarian tubules in the broad ligament are very distinct. They are without any pathologic change. The wall of this part of the tube contains carcinomatous nests in several places. These nests show the path which the carcinoma has followed from the mucosa to the serous coat. The nests are either solid or they have still preserved the papillomatous or coiled arrangement peculiar to the primary growth of the mucosa. Some of these nests are distinctly located in lymph vessels, as is demonstrated by the layer of endothelial cells which is still visible in some places, while in other places there is no such lining of the carcinomatous nests, which are imbedded in the tissue itself.

The nodular enlargements of the isthmic part of the right and left tubes present an extremely interesting combination of neoplasms (see Fig. 5), which is described here for the first time, and has not been mentioned in any other case of carcinoma of the tube. The enlargement of the tube here is not caused by a dilatation of the tubal cavity but by a thickening of the tubal wall. This thickened portion contains a normal tubal cavity, a slit of stellated or more or less straight shape with the cuboidal or low columnar epithelium normally found in this part of the tube. Around the mucous membrane there is the normal circular muscular layer. Between the latter and the serous surface the cause of the thickening is found. The wall of the tube contains: First, the elements of an adenomyoma, and secondly, papillo-carcinomatous masses. The adenomyoma presents the usual appearance as first described by von Recklinghausen.[4] There are epithelial tubes, straight or curved or ramified, surrounded by more or less cytogenic tissue and a well-pronounced muscular coat. I need not further dwell on this adenomyoma as I have disscussed it fully in a paper on "Nodular Forms of Tubal Disease."[5] I must add that in each of these nodules a process of the mucous membrane of the tube was seen penetrating the circular muscular coat of the tube so that here as well as in the cases described in my paper mentioned above, it was hard to decide whether the epithelium of the adenomyoma had originated in Mueller's or in Wolff's duct. Beside this adenomyoma the thickened wall contained beautiful papillo-carcinomatous growths, which in some places were simply papillomatous while in others they were more or less solid nests. In several instances the little cavities which contained the neoplasm were partly lined with a single layer of low columnar epithelium while the rest was lined with multiple epithelial layers or was the seat of papillary growths. This leads me to the conclusion that some at least of the carcinomatous nests developed in cavities primarily belonging to the adenomyoma, supplanting or as it has been called, "infecting," the original epithelium. Under the serous coat there are numerous solid carcinomatous nests filling lymphatics. Some of these nests are so large that they form carcinomatous nodules visible with the naked eye. The small cavities mentioned in the macroscopic description are partly simple cysts of adenomyoma partly filled with papillomatous masses.

Uterus.—On the left side I followed up the extension of the neoplasm into the body of the uterus and found that solid and papillomatous masses were spread a short distance into the muscular coat of the uterus, but did not penetrate deeply into it. Along the

serous coat, however, the neoplasm had spread extensively, so that small subserous fibroids of the posterior wall and fundus of the uterus as well as the adhesion membranes on the uterus everywhere contained carcinomatous masses. The fact that the progress of the malignant neoplasm largely took place along the subserous lymphatics is also proven by the observations made on the body of the uterus, the round ligament, the myoma contained in the uterus and on the endometrium. The endometrium presented nothing but a very slight glandular hyperplasia. The muscular coat of the uterus (with the exception of the external layers mentioned above) and the myoma contained absolutely no epithelial formations. The myoma or rather myofibroma had a well-pronounced capsule and had none of the characteristics of an adenomyoma. The round ligament showed small carcinomatous nodules in and under its serous coat, but its substance was free from epithelial elements.

The carcinomatous infection of the adhesion-membranes around the uterus and its ligaments has produced quite bulky tumors, especially on the right side of the broad ligament where the tumor which is mentioned in the macroscopic description (RM. Fig. 3) and which has almost attained the size of an ovary, is a pure carcinomatous growth. The formation of adhesions with the *ovaries* has also given rise

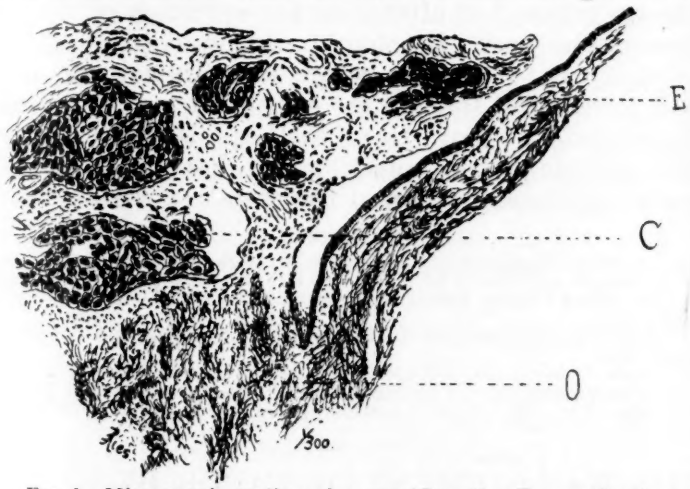

FIG. 6.—Microscopic section of ovary (Case 2). E, germinative epithelium of ovary interrupted where carcinomatous masses C adhere to the surface of the ovary. The substance of the ovary, O, is normal.

to the growth of metastatic carcinoma on the ovaries (Fig. 6). The substance of the ovaries is without a trace of carcinoma, but the surface of the ovaries is studded with carcinomatous nodules. Their metastatic nature is proven by the fact that in many instances the carcinomatous nodule and the ovarian substance are separated by a well-preserved line of germinative epithelium which is interrupted at the places where the adhesion membrane has grown to the ovary. The carcinoma is arranged in the same way as in the subserous nodules on the surface of the tubes and uterus, that is to say, in solid strings of cells following the lymphatics. Where we see a tumor originating in the germinative epithelium of the ovary the structure of the tumor is entirely different, the epithelial neoplasm developing on the surface primarily and essentially in marked contrast to the condition prevailing in this case.

To recapitulate briefly, we have a primary papillo-carcinomatous tumor of both tubes with metastatic growths in the uterus and in the serous coats of the surrounding organs.

Conclusions.—It seems to me that there can be no doubt as to the tumor's origin in the tubes. The only other organ which produces such tumors and would have to be considered is the ovary, the origin in the uterus being excluded by the observation of the neither considerable nor malignant changes in the endometrium. The tumors can not have originated in the ovaries, as according to the histologic description given above the substance of the ovaries is unchanged and the nodules on the surface of the ovaries are of a purely metastatic character.

The origin of the tumors in the tubes is therefore indisputable. The description given above tallies perfectly with the descriptions of the nineteen cases contained in the literature. One observation, however, which marks this as a unique case is worthy of some further discussion, namely, the observation of two neoplasms in each tube: adenomyoma and papillo-carcinoma. Is it possible that the carcinoma originated in the epithelium of the adenomyoma and grew secondarily on the tubal mucous membrane? Or was the adenomyoma the secondary seat of the neoplasm which had originated in the tubal mucous membrane? It is interesting that thickening of the isthmic part of the tubes is mentioned in several cases of tubal carcinoma which perhaps on closer examination might reveal the presence of adenomyomas. It is furthermore noteworthy that von Recklinghausen[4] describes cases where uterine adenomyoma coexisted with malignant adenoma of the uterus. Von Recklinghausen arrived at the conclusion that the presence of adenomyoma in the cancerous uterus was accidental and that the adenomyoma was attacked secondarily by the malignant neoplasm. I believe that we must arrive at the same conclusion with regard to the coexistence of the adenomyoma and the papillo-carcinoma of the tube. The adenomyomas of the tubes are decidedly frequent tumors even though they escaped discovery until very recently. I have in the course of the last year met with six cases of adenomyoma of the tube and the more tubes I examine carefully the more frequently I find those neoplasms. If the present case is the only case of adenomyoma in a carcinomatous tube the proportion would be one in twenty, a proportion which according my experience is much smaller than the proportion of adenomyomas in tubes generally. This latter proportion appears to be nearer the rate of one in five or ten.

There is another reason which causes me to regard the seat of the malignant tumor in the adenomyoma as secondary. The papilloma has left many of the adenomatous tubules intact and it is not likely that a malignant neoplasm which has spread over both tubes and a large peritoneal surface should have shunned reverently the rest of a small nodule from part of which it had originated. This is the more unlikely as communications of these adenomatous tubules exist which would have offered a ready path to the progress of the neoplasm before it ever spread into the cavity of the tube. On the other hand the small slit-like communication between the cavity of the tube and the adenomatous tubules gave the carcinomatous infection, if I may use this term, ready access to the tubules. The progress of the bearer of the carcinomatous infection must have been facilitated by the fact that the occlusion of the abdominal end of the tube and the narrowness of the uterine end of the tubal cavity produced considerable pressure of the contents of the tube.

We arrive therefore at the ultimate conclusion that the carcinoma originated in the epithelium of the

tubal mucosa. If now we compare the papillomatous formations in the tubes with those described above in the case of simple papilloma of the tube we can not fail to recognize the very great similarity between the two. It has been generally assumed that a benignant papilloma of the tube can undergo malignant degeneration and on the other hand that papillo-carcinoma of the tube frequently springs from a non-malignant papilloma. This appears to be quite likely, in fact the tumors are so much alike that a differential diagnosis has been found a matter of great difficulty. We encounter the same doubts here as in the cases of papilloma of the ovary, where clinical experience has led some authors to consider every papilloma malignant, at least to suspect it of malignancy. In our case of papillo-carcinoma the pathologic examination revealing the numerous solid metastases and the clinical history recording recurrence of the disease and death of the patient agree very well. But in our case of "benignant papilloma" I am by no means sure that I may not have overlooked some true carcinomatous nest or that the operator has not failed to remove the neoplasm completely so that in spite of our present diagnosis and the patient's apparent good health there is just the shadow of the possibility of a recurrence.

There is, however, a clinical aspect of this question which is well worth consideration. If there is papilloma of the tube it is impossible without microscopic examination to differentiate between a benignant and a malignant neoplasm. If we have a malignant neoplasm of the tubes the probability of metastatic growths in the organs connected with the tubes is very great. Therefore these organs must be removed with the tubes. To recognize this it is absolutely necessary to cut the tubes open while the operation is proceeding and not to throw them aside for an examination to be made after the abdomen is closed or, as occurs too frequently, never to be made. The advice to open every tube removed was first given by Saenger [2] and I think it is very good advice.

I wish to add a little advice of my own which is suggested by a careful investigation of the postmortem reports of cases of papillo-carcinoma of the tubes which had succumbed to recurrence of the disease. Metastases were found in these cases not only in the uterus but in the retroperitoneal glands. It is perfectly feasible to remove these glands as I first proposed [6] and recently demonstrated in an operation for cancer of the cervix uteri which I performed at the Post-Graduate Hospital in the presence of my class and which the patient has stood very well. (She was discharged cured two weeks after the operation.) These glands as well as the uterus should be removed in every case of papilloma of the tubes. The danger of recurrence can thereby be avoided in a higher degree than by the mere removal of the tubes. Let us look for instance at our case of carcinoma of the tubes. If the uterus had not contained a fibroid it would have appeared unnecessary to many operators to remove it. The consequence of leaving it would have been that all carcinomatous masses contained in the uterus as described above would have remained in the patient. It is true that the recurrence was not avoided by the removal of the uterus. But we do not always meet with such far-gone cases as this and in the cases of limited extent of the neoplasm we have to remember the old rule concerning operations for carcinoma, to remove the tissues to as large an extent around the apparent limits of the neoplasm as possible.

It remains to consider the relations of our case of papillo-carcinoma of the tubes to the other cases recorded of which Doran [1] enumerates nineteen, our case bringing the number up to twenty.

The age of the patients varies between 36 and 60, most of the patients (among them the case presented here) were about 45 years old. The patients were either sterile or had given birth to one child many years (twenty-three years in our case) before the tubal disease was noticed. According to Sænger[2] and Doran[1] the disease was on one side only in twelve cases, on both in the rest of the cases among which ours is to be rubricated. In twelve cases the tubes alone were the seat of the disease. Chronic inflammatory conditions with pus accumulation are very frequently observed.

The prognosis of the operation according to the most recent reports as given by Doran [1] is expressed in the following numbers: Death occurred shortly after operation in three cases, death from recurrence in five cases (10 months, 10 months, 18 months, 5 months, 1 year after operation). Alive with recurrence were three cases, without recurrence, five cases (7 years, 7 months, 19 months, 1 year, 3 months after operation).

The diagnosis has never been made correctly before the operation, but after once the attention of the profession has been directed to this possibility it will probably not take long before the clinical side is so well worked out that we are enabled to make a clinical diagnosis. I refrain from further discussion of the clinical side of this question as I have only made a pathologic examination of the cases reported here.

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THE MANAGEMENT OF LABOR BY EXTERNAL EXAMINATION.

Read at the Meeting of the Obstetric Staff of the Chicago Health Department, Jan. 16, 1897.

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The greatest danger that threatens an obstetric case is septic infection. In comparison with this one other dangers fall into insignificance. The main channel of entrance for the septic material is the vaginal canal. It may attack any laceration or abrasion in any part of this, or simply pass through it into the uterus.

The most common carriers of infection in obstetric cases are foreign bodies introduced into the vaginal canal, such as douche points, fingers or hands, instruments, lubricants, etc. Air and auto-infection are generally admitted to be rare, and the principal factors of contact infection are those mentioned.

The principal aim of the Obstetric Staff of the Health Department should be to avoid puerperal infection in the practice of its members and to aid and assist the midwives, and perhaps other practitioners, in the avoidance of the same. While the anti-

septic and aseptic eras have witnessed a most gratifying decrease of the mortality from puerperal infection in the lying-in institutions, no such decrease, in fact no very perceptible difference has been noticeable in the home cases. How to enable also these to share the full benefits of asepticism, and how to still further decrease the mortality in the institutions, is at present the main questions claiming the attention of the obstetricians in all countries, and should especially interest any obstetrician associated with a department whose function is to combat all avoidable diseases. From what has been said before, it would seem that this can most easily as well as most surely be accomplished by avoiding introduction of any foreign body into the parturient canal. The next question would then be, how far can we avoid this?

The different kinds of obstetric instruments have their certain well-defined fields, and their uses do not concern this paper, which only deals with normal or apparently normal cases. In such cases vaginal douches can be dispensed with. This is proved by a series of experiments made at the Koenigliche Frauenklinik in Dresden under supervision of Professor Leopold. I quote from his report: In 1885, 1886 and 1887 a vaginal douche of weak sublimate solution (1-4000) was given to every patient before and after internal examination, as well as after finished labor. At that time, as the midwives in the Kingdom of Saxony, according to the royal instructions, were not permitted to use vaginal douches in their public practice, it was decided to dispense with vagina douches in normal labor cases. But now suddenly bacteriologic researches discovered the most different pathogenic microbes in the vaginal secretions of the pregnant, and strong advices were given, not only to continue the douches in all cases, but also to try and remove the suspicious secretions by gentle washing. From May 1, 1888, the method adopted was, therefore, to douche and wash gently the vagina of every labor case with a solution of bichlorid of mercury of 1 to 4000. Of 1,136 cases treated by this method 80 per cent. had no temperature over 38 degrees C. (100.4 F.), but 20 per cent. had fever. In 1887, with only ordinary douches, there were 82.8 per cent. of cases with no temperature over 38 degrees C.—almost 3 per cent. more. The result showed at least no improvement. "Is it surprising," Leopold remarks, "that after the unnecessary removal of the vaginal mucus, perineal and vaginal tears, small hemorrhages, numerous sutures and febrile puerperia gathered together." From April 25, 1889, to the middle of March, 1890, 1,123 deiiveries were made in normal labors without any douche or washing of the vagina, otherwise with the ordinary precautions. Of these 90.29 per cent. were without fever; temperature never over 38 degrees C. This seems convincing evidence; and in addition to this, the latest bacteriologic investigations inform us that the normal vaginal secretions are free from pathogenic microbes.

The next question then is, Can we dispense with vaginal examinations? Before arguing the question, I shall briefly report the results of some other series of experiments made by Professor Leopold. From Jan. 1, 1892, to June 30, 1894, 1.768 labor cases out of a total number of 4,035 patients, were not examined internally This number does not, however, comprise the number of labors that might have been managed without internal examination, as a great number were examined internally to give students and midwife pupils instruction. To find the number we must from the total number of cases deduct, in the first place, all those that already were delivered before entering the hospital, or that entered the same with deep standing or already visible fetal head, or in which delivery followed so rapidly that an accurate external examination was impossible; also all cases of abortion and miscarriage before the eighth month. Then all cases requiring operative interference must be excluded, and by operative interference is meant introduction of instruments, colpeurynter or hand to facilitate the course of labor. Then must be deducted all cases in which there was any indication for internal examination, and as such is considered any irregularity in the normal course of labor, for instance, irregular labor pains, premature discharge of the amniotic fluid, etc., or graver diseases as eclampsia, heart disease, etc.

In the last series of 1,693 cases, June 30, 1893, to June 30, 1894, the total number of cases coming under these classifications was 489, leaving 1,204 cases in which internal examinations could have been dispensed with. This would make 71.11 per cent. of the total number, 76.20 per cent. of the number, leaving out the two first classes (those already delivered and the cases of abortion and miscarriage) and 90.25 per cent. if we also leave out the cases calling for operative interference. The percentage could be still further increased by excluding a certain number of pathologic cases, cases suffering from general or local diseases. Of this number 436 cases were examined internally with no other object than instruction of the students and midwife pupils.

The results as to mortality and morbidity in these series are unfortunately not stated. As to the value of the external examination to ascertain the presentation and position of the fetus, the following figures will give some idea: In the first series of 1,000 cases diagnostic mistakes were made 65 times (6.5 per cent.). There are 971 cases of occiput presentations with 54 mistakes, 6 cases of forehead presentation with 2 mistakes, 12 breech presentation with 2 mistakes, 6 face presentations with 6 mistakes and 4 twin pregnancies with 1 mistake. In the second series all 1,580 cases were externally examined and the diagnosis made, even in those cases where later an internal examination was made. The number of mistakes was here reduced to 28 (1.77 per cent.) as follows; 25 cases of forehead presentation with 3 mistakes, 80 cases of breech presentation with 8 mistakes, 14 cases of face presentation with 8 mistakes, 13 cases of twin pregnancies with 4 mistakes and 5 mistakes in cases offering special difficulties. These figures would seem to prove that the principal objection to the limitations of internal examination, viz., that the external examination often gives too uncertain results to replace the internal one, is unjustified.

Another objection is, that the exact diagnosis and prognosis of the labor would be impossible, as the condition of the pelvis and the soft parts would not be known, and that presentation or prolapse of extremities or the cord could not be recognized. To this objection can be answered, that obstructions to labor caused by pathologic conditions of the soft parts or of the bony pelvis not recognizable by external mensurations, and in which there have not been symptoms to raise even a suspicion of their existence, would be very rare. In cases where the presentation or prolapse of extremities cause a misproportion between the pre-

senting head and the pelvis, the difficulty can be recognized externally by the persistent high standing of the head. And prolapse of the cord is undoubtedly, in very many cases, caused just by the internal examination, the head being pushed up or the membranes ruptured. The progress of labor can probably, with some practice, be judged almost as well by external as by internal examination. The many advantages of avoiding internal examinations are too well recognized to require more than a passing mentioning.

Let us at last consider how the examination should be made, and by what signs we ascertain the presentation and position of the child as well as the progress of labor. Having decided that external examination, as much as possible, shall take the place of the internal, it is our duty to perfect the first one as much as possible, and by constant practice make ourselves as accomplished as possible. Inspection, mensuration, percussion and auscultation, and the results to be obtained from them, are too well known to be gone into here, and it is only necessary to impress the necessity of making use of them in all cases.

Palpation is the part of the examination that gives us the most important information and that enables us to follow the progress of labor, and Professor Leopold has divided this into four steps. The examiner is seated at the side of the patient, facing the same. Patient is in horizontal position and must be examined between the pains. Abdomen is uncovered.

1. Both hands are placed transversely on the abdomen, with the tips of the fingers of one hand touching those of the other. They are then moved lightly over the abdomen to the fundus and the position of the same in relation to the umbilicus and epigastrium ascertained. One can easily ascertain: 1, the period of gestation; 2, size of the child; 3, the position of the child, longitudinal, oblique or transverse; 4, the presentation of the child, head or breech in fundus.

2. The hands are moved from the epigastrium, one to each side of the abdomen, and placed flat on the sides of the uterus. Under the one the extremities are usually felt, under the other a long smooth surface, the back of the child. One of the hands can also be placed on the abdomen in the median line and a light pressure be made, whereby the amniotic fluid will be pressed to one side and the back of the child to the other, nearer the abdominal wall, where it can be palpated more easily.

3. Either hand may be used, and the fingers should be spread as much as possible. The thumb and the second finger grasp the presenting part of the child over the pelvic inlet. In case this is hard and round, it can only be the head. If it is much softer and uneven it is likely to be the breech. In case the presenting part can only be made out indistinctly, and it seems softer than usual or covered, one would think of a low insertion of the placenta. In case no presenting part can be felt over the pelvic inlet, the examiner should look for the head (or breech) at the sides of the abdomen.

4. The following procedure is used when the presenting part already is in the middle, or at the outlet, of the pelvis. In this the back is turned toward the patient's face. Starting above the inguinal region both hands, with the insides turned toward the uterus, are slowly and gently pressed down along the pelvic walls. If the presenting part is deeply located, one hand may be used at a time. By deep-seated head one can plainly feel that a hard round part of the child occupies the space of the pelvis, and the chin may be felt by the right hand in O. L. A. and by the left hand in O. D. A. position. The prominent and rounded forehead in the one side can be distinguished from the flatter neck in the opposite side. Or one can feel that the hard prominence of the occiput gradually loses its hardness, as the hand is moved upward, but that still a distinct resistance remains (the neck). The frontal prominence is in the first place located higher up, and in the second place an abrupt depression is felt above the same; no resistance is felt any more (over the face). The face slants, as the chin rests on the chest obliquely, inward and can not be felt. Above the forehead the extremities may be felt. This examination should always be performed systematically, and one should always know what place on the presenting part the fingers are touching, and how its position is changed in the course of labor.

As to the possibility of teaching students and midwives the external examination, Leopold states it as his experience that physicians generally after two to three weeks make quite certain diagnoses externally, and that midwives, even the less gifted ones, after three months only exceptionally make mistakes; not oftener, or perhaps not as often, as by internal examination. The external examination, being much more harmless, can be made much oftener than the internal one, and gives the students more opportunity to learn. And how is it about the certainty of the internal examination made by midwives, and also by many physicians? Is it not, as Hegar says, often done only for a show, and nothing is ascertained?

When one can feel on the one side the forehead, on the other side and somewhat lower the occiput, the head is clearly in the ordinary position with the occiput presenting. In a vertex presentation (*Vorderhauptlage*), forehead and occiput stand in the same plane, the occiput sometimes even higher. The more the chin is removed from the chest, the greater the changes from what is usually found; this is most pronounced in face presentations. In these an unusually large hard part, the occiput, can be felt on the one side, but on the other side one can press deeper into the pelvis, without encountering any prominence resembling the forehead. If one only thinks of the possibility of a face presentation the diagnosis is not difficult. The other results of the examination are also characteristic. The back can generally be felt only very indistinctly and far back. On account of the extreme extension of the head the back is strongly lordotic and turns during the course of labor more and more backward. The extremities can be felt so much the plainer, apparently directly under the abdominal wall, and the fetal heart tones can also here be heard the plainest.

Of other abnormal presentations, the one of the posterior parietal bone can easily be recognized externally. The head is felt surprisingly close under the abdominal walls; it presents as a prominent hard ball over the symphysis pubis, in appearance resembling the distended bladder. Above this comes a depression, caused by the flexion of the neck. The anterior wall of the womb is not, as usual, convex, but shows generally a visible concavity. Lateral deviations of the head toward one iliac region can also be recognized externally.

It can furthermore be ascertained by external examination in what pelvic plane the head is. The head that is free over the pelvic inlet is easily recognized,

but it is still advisable always in such cases by the fourth step to ascertain if the pelvis really is empty, and that it is not the shoulders one has felt, while the head is deep in the pelvis.

If we have a case of occiput presentation with the head in the pelvic inlet, and only a small segment has entered the same, the occiput can by the third step be felt equally as well as the forehead, and stands above the pubic bone. In this position the head may still be somewhat movable. This can be ascertained if one using the third step makes a pressure with the thumb or second finger, and with the other fingers feel if the head yields to the pressure. If the head is right in the pelvic inlet, the forehead only can be felt by the third step as ordinarily made. To reach the occiput we must palpate lower down in the pelvis. This position of the head is usually found in primiparæ already during the last three or four weeks, providing the pelvis is normal, and is also generally the position found in labor cases at the time we are called in. On further progress the head gradually disappears for the third step. But on changing the position of the hand somewhat by directing the fingers more downward in the pelvis, the prominence of the forehead can still be felt. The head is now deep in the inlet very near the middle of the pelvis. When the head can not be felt any more by the third step, but still is palpable with the fourth one, it stands exactly in the middle of the pelvis. One can reach the forehead on the one side, but not the occiput on the other; here the neck only can be felt, and this can easily be distinguished from the occiput and still easier from the forehead, by its lesser degree of hardness and its perfectly flat form. Finally, when the head can not be reached either by the third or the fourth step, it is below the middle of the pelvis. Here the external examination has its limitation, but it is also n o longer necessary, having fulfilled its mission. The head can now be felt by pressing on the perineum externally, or is already visible on separation of the labia, and the perineum generally bulges out during the pains.

The rotation of the head can be followed externally in the same way as the descent; the marking point is the forehead and one must notice the position of this from the beginning. The farther the head descends in normal occiput presentation, the more posteriorly must the examination be made to feel the forehead, and the more anteriorly the occiput is to be looked for. External examination of any other head presentation are made in a similar manner.

In cases of narrow pelvis the diagnosis can almost in all cases be made by the external examination and this is especially valuable for midwives. Suspicion is always aroused, if in the case of a primipara in the last weeks of pregnancy the head is found free over the pelvic inlet or when in a case of a multipara the head does not descend in spite of strong pains. If the quantity of amniotic fluid is great, it may also with a normal pelvis take a long time before the head engages. If in cases of narrow pelvis the membranes are ruptured prematurely the head will apparently engage, but the high position of the forehead and the occiput will signify that it is not engaged *in* but only *on* the pelvic inlet. As to the form of the narrow pelvis, exaggerated flexion of the head and deep location of the occiput are characteristic in cases of generally contracted pelves, while in cases, in which the forehead and the occiput stand in about the same plane the pelvis is a flat one.

If we (with Michaelis) call all pelves with a conjugata externa under 18.5 cm., narrow, providing the weight of the child is at least 3000 grams, we have in the first series of 1,000 cases managed by external examination 168 cases of narrow pelves. In 45 of these the child weighed 3500 grams and there were pelves with a conjugata vera as short as $9\frac{3}{4}$ cm. In cases of generally contracted pelvis one is liable to be deceived as well by the external as by the internal examination. On account of the pressure from all sides the head is stretched to such a length that it may happen, that the most prominent part of the head, generally the caput succedaneum, may be visible during the pains, while the forehead still can be felt from above. By external palpation it is difficult to realize how far the occiput may have advanced and by internal examination it is equally difficult to realize how high the forehead still may be standing when the occiput is right at the outlet.

Pawlik has drawn attention to the possibility of palpating the furrow of the neck and the chin, and Veit has suggested to palpate the presenting part through the incisuræ ischiadicæ majores, when it already is deep in the pelvis.

The fontanelles can only in exceptional cases be felt. The superior orbital margin can frequently be felt; also the angle between the frontal and the temporal bone and these points serve to distinguish between the occiput and the forehead. The temporofrontal angle can plainly be felt, for example in the O.D.A. position, and the third step of the examination by placing the third phalanx of the second finger of the right hand on the frontal surface, the second and first phalanges on the temporal surface, or in the fourth step of the examination by spreading the fingers so the index rests on the temporal bone, the three other fingers on the frontal.

Breech presentations can generally be easily told from head presentation. If the breech should already be engaged and the crista ilii be mistaken for the forehead, one will fail to find the characteristic signs of the forehead and also the furrow of the neck; the most audible point of the heart tones is higher and the head can generally be palpated in the fundus. In case it should be difficult to feel this on account of overlying placenta or lack of amniotic fluid it may be necessary to press the fingers in from one side or the other, even under the right lobe of the liver. When the breech descends deeper, it can be palpated from the perineum.

In closing this paper I desire to impress upon this organization, in our official capacity, of the necessity of emphasizing as much as possible the great importance of the external examination and the desirability of limiting the internal examination.

DISCUSSION.

Dr. A. H. Burr said that he relied on the vaiginal touch to determine the progress of labor. That dangers of sepis were exaggerated, that there were many other causes of puerperal fever beside the doctor, *e.g.*, old roller bandage tampon, infected before labor, pus tubes, etc. There is little danger if asepsis is practiced.

Dr. Siemenovicz said the midwives are filthy and will not obey instructions; they will treat four or five sepsis cases a week and care for labor cases at the same time. He detailed some amusing experiences.

Dr. Niles said he approved of external examinations but that we can not do without internal exploration. We can sterilize the hands but can not be sure of the vulva and surroundings.

Dr. Effa V. Davis approved of making external examinations popular, but needs internal examinations, which are without danger, since we can sterilize the hands. Different methods of

doing this, vary in efficiency. Dr. Davis had 150 cases, including operative cases, without fever.

Dr. C. S. BACON suggested that a temperature of 100 degrees might be due to infection.

Dr. J. M. SLOANE emphasized external examination, but said he could not tell the progress of labor by it.

Dr. WYLLIS said it was rare to see a doctor boil his syringe. He seldom gives douches, believing they do more harm than good. He never has trouble if the hands, the vulva, the towels, etc., are clean.

Dr. J. B. DELEE said the external examination should always precede the internal, and if the heart tones are good, and the position determined, the internal is not needed, unless to see if one is safe in leaving the case. On an average two examinations should suffice for a normal case.

Dr. C. S. BACON said that internal examinations are in the line of an operation, and are needed to tell the size of the cervix and pathologic conditions.

Dr. SANDBERG in closing the discussion said the principal idea in the paper was in relation to the midwives. One should set them a good example, and recommend the external method of diagnosis.

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THE SOURCE OF SUGAR IN DIABETES MELLITUS WITH A THEORY AS TO ITS EXCRETION UNCHANGED IN THE URINE.

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The proteid molecule is not to be considered as a perfect chemic body, but is to be looked on as a complex, composite mixture, that is, composed of several organic radicals. To quote from the elaborate article of Krukenberg ("Separat-Abdruck" a. d. Sitzungsberichte d. Jena'isch. Gesellschaft f. Med. u. Naturwissensch. 1885): "The molecule of albumin is to be considered as a composite of different chemic atom groups. Many of these atom groups can be lacking or split off in crystalline form without the reactions of the remaining body being affected." He believes that albumin contains groups which yield leucin, tyrosin, indol, etc., together with others which give the biuret or xanthroproteic reactions or the coagulation tests. He also found a group which had the power of reducing copper oxid on heating in alkalin solution, thus demonstrating the presence of the carbohydrate group. There is also a fatty group.

It was shown by Pavy in 1894 ("Physiology of the Carbohydrates," p. 27) that proteid matter generally, whether derived from the animal or vegetable kingdom, was in constitution a glucosid. In one experiment he took purified egg albumin and treated the same with a solution of potash. By the action of the potash he abtained an amylose carbohydrate corresponding to Landwehr's "animal gum," which on treatment with sulphuric acid yielded a body which gave the characteristic reactions of sugar. It was found, further, that sugar is yielded by the direct action of sulphuric acid on egg albumin and that the same occurs as a result of pepsin digestion. It was subsequently shown by Ling ("Epicriticism," 1895) that the osazone derived from the cleavage product was a sugar osazone. These results reached by Pavy had also been arrived at by Schuetzenberger (*Bull. de la Soc. Chimique de Paris*, Vol. xxiii, p. 161, 1875), who found that the action of strong sulphuric acid on egg albumin caused the appearance of a non-nitrogenous body which reduced Fehling s solution energetically, was precipitated by ammoniated acetate of lead solution and appeared to be glucose or an analogous body. He also found that on exposing egg albumin to baryta water at 100 for a period of 120 hours he obtained a non-nitrogenous body, insoluble in alcohol, precipitable by ammoniated acetate of lead, not reducing Fehling's solution but transformable on boiling with sulphuric acid into a body which did. Its elementary composition was found to agree very closely with dextrin, with which, as Schuetzenberger remarks, it presents the greatest analogy. That proteid can be produced from carbohydrates alone has been shown by Pasteur who found that yeast cells multiplied freely in a medium composed of sugar, ammonium nitrate, the ash of yeast and water. In this experiment the only source of the carbon of the proteid is found in the sugar. According to Pavy (London *Lancet*, Oct. 17, 1896) carbohydratic matter incorporated in the proteid molecule during its construction can again be split off from it by chemic or ferment action and in the tissues this is probably the source of the free carbohydrates found to a certain extent in various parts of the body. There could be no doubt that in the grave form of diabetes the sugar eliminated is largely derived from the tissue albumin.

An albumin, then, is a mixture of proteid, carbohydratic and fat radicals and it is believed that the carbohydrate group enters directly into its production rather than that it is formed within it. It is believed that upon the decomposition of the proteid molecule two primary divisions will be obtained, the nitrogenous and the non-nitrogenous. How large the proportion of the non-nitrogenous part really is can be seen by comparing the proportions of carbon and nitrogen in a proteid with urea, its chief decompositon product. The following table is taken from Foster ("Textbook of Physiology").

	C.	H.	O.	N.	S.
Urea. . .	20.00	6.66	26.67	46.67	——
Proteid. .	53.00	7.30	23.04	15.53	1.13

It is readily seen that the proteid contains far more carbon than is necessary to unite with the nitrogen present to form urea. The non-nitrogenous group probably splits up in the formation of glucose and the fatty acids. According to Cohnheim ("Vorlesungen über allgemeine Pathologie") there are two kinds of oxidation which go on in the healthy organism. One is the decomposition of albuminoid bodies, resulting in the sugar, fats, fatty acids and nitrogenous decomposition products. In this oxidation it is probable that a certain amount of heat is evolved. The second kind of oxidation is that by which the sugars, both ingested and that produced from albumin, are oxidized to their end-products of CO_2 and H_2O in the production of heat and energy. It is believed by the writer that in health these two processes run parallel and vary directly with each other. In diabetes, on the contrary, this equilibrium is lost, the decomposition of albumin is increased while the capacity of the system to burn the sugar produced in this albumin decomposition is greatly diminished.

The writer has come to the conclusion, as the only possible explanation of certain of the phenomena in

diabetes, that the sugar so produced from proteids through cell activity is an isomer of ordinary glucose, distinguished from this by being less readily oxidized in the system and, by not being readily dehydrated by the liver cells into glycogen. It is well known that many bodies created by cell activity differ in various respects from the same substances which may have been chemically prepared. As an instance, beta hydroxybutyric acid, so frequently present in the saccharine urine of diabetes, is optically inactive when manufactured synthetically although the same substance, when a product of systemic metabolism, shows a left rotation by the polariscope. Many facts favor the above theory.

1. An increase, in moderation, of carbohydratic food leads to an accumulation of glycogen in the liver but does not affect the quantity of blood sugar.

2. An increase in the decomposition of proteids does not materially affect the quantity of liver glycogen but does cause an increase in the blood sugar. Bödeker (Landois' "Physiologie," p. 458) was able to produce an artificial glycosuria in healthy men by giving a diet composed exclusively of meat and chondrin.

3. The blood sugar remains constant in hunger, the sugar then coming almost wholly from the systemic albumin with possibly a small portion derived from the liver. Prolonged nitrogenous diet greatly decreases the amount of the liver glycogen. Whatever glycogen is found in such cases is believed to be manufactured by the liver cells themselves, since it has been demonstrated that they have the power of directly producing a small amount of glycogen.

4. Large amounts of carbohydrates taken in a short time may temporarily increase the proportion of blood sugar simply because the liver is capable of dehydrating into glycogen a definite amount of glucose in a fixed time.

It has been shown in a previous article that the diabetic suffers from an especial predisposition toward albumin decomposition and tissue waste, and that this abnormal metabolism must consequently result in an increase of the nitrogenous and non-nitrogenous decomposition products. In diabetes, however, these products do not bear the same relationship to each other that they do in health. It has already been advanced that the non-nitrogenous part of the proteid molecule yields sugar and fat, the latter more especially during health, when there is a limited oxidation going on, since it is well-known that a limited supply of oxygen furnishes a most favorable condition for the production of fat from proteids. Adipocere, for instance, is produced under these conditions. In diabetes, however, an entirely different state of affairs exists. In this disease an excessive oxidation and metabolism is going on which is extremely unfavorable for the production of fats but in which the greater part of the carbon radical in the proteid molecule is converted into a sugar which is thought by the writer to be an isomeric form of that obtained from a vegetable source. This existing tendency toward metabolism is increased if all carbohydrate sources of sugar are cut off, since such a dietetic condition imposes the necessity on the system of creating from proteids such sugar as is essential for the well being of the economy. Such a process must necessarily increase the severity of the disease in mild cases, and, sooner or later, in true diabetes as distinguished from simple glycosuria, this excessive metabolism results in the production of more isomeric sugar than the system is able to completely oxidize. Since the sugar derived from an albuminoid source does not appear to be readily dehydrated into glycogen and stored up in the liver the excess of such sugar is excreted unburned in the urine.

Although it has already been shown that in diabetes there is an increase of the first kind of oxidation resulting in an excessive decomposition of albumin, an entirely different condition prevails in the second class, by which sugar is burned in the production of heat and energy. This power of oxidizing sugar is so much impaired that the isomeric sugar, produced in an albumin decomposition, being less readily oxidized or converted into glycogen than is sugar derived from a carbohydratic source, is excreted unchanged if a free ingestion of carbohydrates be allowed and thus a sufficient supply of a readily assimilable sugar is at hand to meet the needs of the system. If carbohydrates are taken in moderation no sugar derived from them appears in the urine, the sugar excreted being only the less easily burned isomer.

It is well known that mannite, inosite and levulose are entirely oxidized in the diabetic organism. Experiments made by Voit (*Zeitschrift für Biologie*, Vol. xxviii, Sec. 3) show that milk sugar also is very much more readily burned in the diabetic organism than is dextrose. As the conversion of lactose into dextrose in the diabetic organism is impossible, as no trace of milk sugar can be found in the urine and since the excretion of dextrose under the ingestion of lactose is very much increased, he believes that the more readily oxidized milk sugar takes the place of a certain quantity of glucose which would otherwise have been burned in the organism but which, under these conditions, is excreted unchanged. His work also shows that sugar derived from albumin is not readily dehydrated into glycogen. He takes a diabetic who excretes sugar even on a proteid diet, examines his urine for grape sugar, finds the amount and on the following day, under exactly the same conditions, gives 100 gm. of milk sugar.

	Sugar in urine.	After fermentation.
Exp. 1, 1st day, Proteid diet	17.461 gm.	none
2d day, 100 gm. lactose	66.818 gm.	none
Exp. 2, 1st day, Proteid diet	57.633 gm.	none
2d day, 150 gm. lactose	165.715 gm.	trace

Both lactose and glucose respond to Fehling's test but the former is not affected by fermentative action. In the last experiment the glucose excreted after the administration of 150 gm. of lactose minus the previous excretion on a known proteid diet, represents the total amount of sugar produced from albumin which the patient had been able to oxidize. Beyond this point, then, there would be no relation between the excretion of glucose and the ingestion of lactose.

Furthermore, if a diabetic be placed upon a proteid diet until the excretion of sugar has entirely ceased, the ingestion of sugar bears no relation to its excretion as may be seen by the following tables of Külz (*Marburg Elwert*, 8. S. 222, 1874). The patient was excreting no sugar on a mixed diet. One hundred gm. of dextrose was given in solution every twenty-four hours.

	24 hours urine, c. c.	Sugar excretion, gm.
1	1273	0.946
2	1527	2.994
3	2144	1.526
4	1622	1.950
5	1653	1.710
6	1353	3.996

	24 hours urine, c.c.	Sugar excretion, gm.
7	1278	3.510
8	1344	5.898
9	968	4.536
10	1226	4.914
11	1299	5.220
12	1454	3.319

The same investigator reports (*loc. cit.*) a series of experiments made upon a diabetic excreting an average of 47 gm. of sugar upon an exclusive proteid diet. The patient received 100 gm. of glucose in the twenty-four hours.

	24 hours urine, c. c.	Sugar excretion, gm.
1	2496	79.8
2	2763	90.0
3	2444	71.6
4	1905	85.1

From the above results the usual daily excretion of 47 gm. must be subtracted, thus showing an actual increase of only about 33 gm. But how is it possible that a patient apparently manufacturing more sugar than he can burn will excrete only a slightly increased amount when ingesting large quantities of carbohydrates? It must be explained like the conclusions of Voit with regard to milk sugar. The diabetic organism does not oxidize all sugars with equal facility and sugar produced from carbohydrates is more readily oxidized or stored up in the liver than is sugar derived from an albumin source.

If now the quantity of sugar be estimated which a diabetic on starvation is able to excrete, and then known amounts of albumin be given, it is found that the amount of the sugar excreted in the urine varies directly with the quantity of albumin ingested. This point has also been demonstrated by Külz (*Arch. f. Exp. Path. u. Pharm.*, vi. 140) in the following experiments. The food used was casein, free from fat and sugar.

	Amount casein, gm.	24 hours urine, c. c.	24 hours sugar exc., gm.
Exp. 1	200	4180	79
	240	4100	70.1
	300	4950	87.1
	500	6420	137.1
Exp. 2	200	4460	66
	240	6140	65.7
	300	6620	96.7
	500	7210	126.9
	240	5250	86.6

The above tables show that sugar is produced from ingested proteid, that the production of such sugar varies directly with the amount of proteid ingested, that the sugar so produced from proteid is burned to some extent in the diabetic organism, it may be in mild cases to the extent of its production if no carbohydrates are given but that, if carbohydrates are allowed, such sugar is excreted unburned. These tables also show that a diabetic is able to utilize sugar given by the mouth gram for gram, but that the sugar produced by the diabetic from ingested proteid is largely eliminated as an excrementitious body. They also show that while sugar produced from proteid is burned with reluctance by the diabetic organism the liver is apparently wholly unable to convert it into, and store it up as, glycogen, with the result that what can not be utilized in any given time is excreted unburned.

Ordinary glucose and diabetic sugar have the same chemic formula and the same gross characteristics, but this does not prove them identical in all their qualities. There are at present at least three isomers of ordinary glucose, differing from each other in being dextro-rotatory, levo-rotatory and optically inactive. A new saccharin body has also been lately discovered by Low (*Berichte d. deutch. chem. Gesellsch.*, xxii, S. 471), which has the properties of dextrose and levulose and is intermediate between them. From the above facts it is evident that the occurrence of an isomeric form of ordinary glucose in diabetic sugar is more than probable and apparently furnishes the only key to the unsolved problem of the oxidation of sugar in diabetes. The writer hopes to continue work on this subject with the idea of definitely settling this question. To sum up:

1. Sugar appears in the urine in health after inordinate ingestion of carbohydrates simply because the capacity of the liver cells to convert a definite amount of sugar into glycogen, in a given time, is exceeded.

2. Sugar appears in the urine in diabetes because the system produces more sugar by the decomposition of albumin than it can completely oxidize, this sugar not being stored up by the liver as glycogen and being less readily oxidized by the diabetic organism than sugar produced from carbohydrates.

3. It disappears from the urine, if mild cases of diabetes are placed upon a proteid diet, because a withdrawal of all carbohydrates from the diet forces the system to burn the isomeric albumin-sugar in the maintenance of the necessary heat and energy.

4. It subsequently appears in the urine under such treatment because, with the progress of the affection, sugar is produced in quantities too large to be completely oxidized and the diabetic does not appear able to store up this sugar as glycogen.

5. The excretion of sugar by a diabetic, upon a proteid diet, may rise to a certain point upon the ingestion of carbohydrates, since the more readily utilized carbohydrate sugar saves the isomeric albumin-sugar from oxidation and the latter is excreted as a waste product.

It will be observed from the above that it is the belief of the writer that ordinary sugar, ingested in moderation, no more appears in the urine in diabetes than it does in health and that the excreted sugar is wholly a product of proteid decomposition.

ANTIPATHY TO BINOCULAR SINGLE VISION; AND THE LINE SEPARATING THE RETINA INTO ITS TWO HALVES.

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That there are cases of strabismus in which it is impossible to establish binocular single vision, most oculists who have had a few years of practical experience will attest. Graefe saw a few of these cases and, on at least two occasions, wrote about them, always confessing that he could do nothing for them. In studying these cases he reached the conclusion that the cause was either faulty projection depending on injured nerve centers, or on the impossibility of obtaining associated action of muscles when these had been long unaccustomed to association. In his cases the visual power of each eye was quite good, for the strabismus had been of the alternating type. By operations and by prisms he could make the images approach but he could never cause them to fuse. "The images would pass from side to side, above and below, or one behind the other, always on the point of uniting, but never united."

Stevens has seen and studied these cases. Having

been more fortunate than Graefe, in that he has occasionally succeeded in establishing binocular single vision, he offers, as an explanation, unequal tension of corresponding ocular muscles, under the influence of corresponding nerve-impulses directed to them. He teaches that this unequal tension may be in the lateral muscles as the result of wrong operations in attempting to correct the squint; but he specially emphasizes the idea of unequal tension of the vertically acting muscles as a cause of the antipathy. In some of his cases he has brought about equality of tension by operative means, and binocular single vision has resulted. In other cases he has failed. To the mind of the writer this shows that there are two classes of cases, the one curable, the other incurable. Unequal tension may cause double vision when the head is erect and the eyes attempt to look straight ahead; but in these cases prisms ought always to fuse the images, as does a posing of the head, or moving the object in a definite direction.

In a typical case of antipathy to binocular single vision, fusion can not be had either by posing the head, by moving the object up, down, in or out, or by means of prisms; and fusion by operative means would, consequently, be impossible. We have had two such cases. In each there was good acuteness of vision in both eyes; and there had always been alternating squint. Others had operated on these cases and had failed. Ignorant of what we now believe to be the true cause, we, too, operated and—failed. In each case we added to the confusion by bringing the images close together—we could not fuse them. Our study of the last case was earnest and, for some time, most confusing. By prisms we could make the images "kiss" and then they would recede or change sides; again as the false image approached the true it would rise above or go below the true and thus get on the other side. They would not fuse.

We believe the true cause of a typical case of antipathy to binocular single vision to be: The macula in one eye is connected with the right side of the brain, while the macula in the other eye is connected with the left side of the brain.

We are taught in the books that the temporal half of the right retina and the nasal half of the left retina are connected by optic nerve fibers with the cuneus in the right occipital lobe; and that the temporal half of the left retina and the nasal half of the right retina are connected, in the same manner, with the cuneus in the left occipital lobe. That the line of separation does not always divide the retina into two equal parts has been clearly shown by intra-cranial disease. Nettleship has reported a case in which disease of one side of the brain caused total blindness in the temporal half of one retina and in the nasal half of the other, the line separating the blind and seeing parts of each retina being vertical and passing through the macula. We have had two cases in which meningitis destroyed the right optic tract. The line separating the blind from the seeing part of each retina was not vertical, but passed to the right of the macula, in one case missing it 10 degrees and in the other about 5 degrees. In each eye both of these cases had perfect central vision, peripheral vision being normal in the right field, but limited, as indicated above, in the left field. We have had one other case in which, after a puerperal convulsion, there was central and left-field total blindness, the right field being normal except that it failed to reach the vertical plane of each eye by about 5 degrees. In this case the line separating the blind from the seeing part of each retina was not quite vertical, and passed about 5 degrees to the left of the macula. Here are four cases: In one the lines of separation passed through the maculæ; in another, 10 degrees to the right of the maculæ; in another about 5 degrees to the right of the maculæ; and in the fourth about 5 degrees to the left of the maculæ. If these lines can vary in the same direction in the two eyes, may they not vary in opposite directions? and would not such a condition account for some cases of squint in which there is incurable antipathy to binocular single vision?

Nettleship does not so state, but it is reasonable to suppose that his case was ambidextrous; our two cases first noted are right-handed; the last case was not interrogated on this point, but a reasonable conclusion is that she is left-handed. May it not be that the connection of the maculæ with the left brain determines right-handedness; with the right brain, left-handedness?

There are some patients, especially those subject to sick-headache, who complain of temporary loss of a lateral half of the central field. If looking at a face the right or left half disappears. This must be due to a temporary suspension of functional activity on the part of a portion of the cuneus in one side of the brain while the corresponding part of the other side of the brain continues to do its work. This symptom would occur only in those cases in whom the line dividing the one-half of the retina from the other passes through the macula. Such cases are not numerous, therefore it is reasonable to conclude that this retinal line does not often pass vertically through the macula.

FATAL LEPTO-MENINGITIS DUE TO ENDOMETRITIS ORIGINATING FROM THE DIPLOCOCCUS PNEUMONIÆ.

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A few days since I had an opportunity to perform an autopsy especially interesting through its unexpected outcome. Autopsies are difficult to obtain in this region, und this one was obtained because of the well-known suspiciousness and ignorance of the negroes. Several weeks since I was permitted to hold one on the body of a woman simply because she was supposed to have been "hoodooed" to death.

In this case I was informed by the decedent's roommate that " the lady next door had sold them five cents worth of dumplin's an' I aint sayin' she was poisoned but she said 'Oh Sallie, I'm poisoned, I knows I is,' an' I ate the dumplin's too but they didn't hurt me an' I wants you to fin' out all about it, I does." Though, under the circumstances, it was impossible to get any consecutive and clear history of the case, this is what I obtained. The dead woman, a washerwoman, had worked on Thursday all day. That evening she complained of toothache, and in the morning said the toothache was still worse. She stayed in bed a portion of Friday, yet walked about some, complaining during the afternoon that the toothache was the worst that she had ever had, and finally said that her head hurt also. About 7 o'clock Friday evening she went into a convulsion of pain, though not unconscious, they said, and rolled over the floor through the agony

in the teeth and the head. At 8 o'clock she died. The necropsy was performed the next morning at 9. My findings were as follows: Body of a large, well nourished colored woman of about 20 (said to be 17) No rigor mortis, no external scars or marks of note. Abdominal cavity normal in appearance and omentum down over intestines. Appendix very long, free and pointing upward, backward and to the right; diaphragm to the fifth interspace on both sides; liver just below the border of the ribs. Pleuræ entirely free, no fluid in pleural cavities, lungs on section rather pale and markedly edematous. Pericardium free and contains one ounce of clear serous fluid, ventricles contracted, left empty, right contains a little fluid blood; auricles distended with fluid blood, a mixed clot extending into the pulmonary artery; heart musculature normal in appearance; valves also normal. Spleen slightly enlarged, malpighian bodies very prominent; no perisplenitis. Kidneys normal with exception of marked congestion. Liver somewhat congested. Intestinal mucosa and serosa normal. Ovaries about three times normal size, cystic and fibroid; uterus congested and with purulent endometritis. Though there were no abdominal markings the uterus and breasts looked as if she had either had a child or a miscarriage at some time. The calvaria was slightly adherent along the longitudinal fissure; the pial veins widely distended with blood, and a small amount of fibro-purulent exudate was found both above and below the pia, especially over the convexity of the right hemisphere; and a small amount of more fluid pus was discovered at the base, the pineal gland especially being bathed with it. The petrous portion of the temporal bones was removed to expose the middle and the internal ears, but these were found free from pus.

The brain was taken to the laboratory for further examination, as well as a piece of the lung and the kidney and the entire uterus. Thinking the pus in the latter probably of gonorrheal origin I wished to look for the gonococcus. Cover glasses spread with pus from the brain disclosed no other organism than the diplococcus lanceolatus and very few of them. There was no pneumonia and no middle ear abscess and I was at a loss to account for their entrance to the brain. Some blood slides from the pial vessels were carefully gone over but revealed nothing except the leucocytosis usually so marked in purulent meningitis. Upon staining the pus from the uterus, what was my surprise to observe nothing but the same diplococcus I had just gotten from the brain, and as in the brain few in number. The pus in the uterine fundus had scarcely any, that in the cervical portion more. The reaction of the pus was neutral or at most faintly alkaline. Believing that I was now certainly on the track of the method of infection, I stained a number of slides prepared with blood from the kidney and was rewarded by finding a few diplococci in them, but now with capsules, whereas those from the brain and uterine pus were without. A more thorough search also disclosed a few organisms in the slides prepared from the blood of the pial vessels. I did not succeed in finding any, however, in the exudate squeezed out from cut pieces of the lung.

A small piece of the fibrinous pus from the brain was inserted under the skin of a very heavy full-grown rabbit, and a little of the pus from the uterus put under the skin of a common house mouse. In twenty-four hours both animals were plainly sick, and a slide made of blood from the rabbit showed the encapsuled diplococcus. In thirty-six hours the mouse died, and in forty-eight the rabbit succumbed. Slides made from the blood of each animal yielded nothing but the encapsuled diplococcus, and in such numbers as to show a marked virulence and profound infection. Cultures made in agar from the heart's blood of each animal gave pure growths of the diplococcus lanceolatus, developing in the manner usually characteristic of this organism.

It would seem from this presentation that there can be no doubt the brain infection was due to the absorption of virulent diplococci from the inflamed uterine mucosa into the blood and their transference to the meninges. As I am not aware that any one has as yet suggested the possibility of such an infection as a cause of endometritis, the case is also interesting in that connection, and it might be well for those who have such conditions to treat to make thorough bacteriologic examinations of the pus in order to establish the fact whether or not this is a very exceptional instance. If not, then to the already long train of ills accompanying this condition, there is added another danger which up to this time no one has feared.

IMPROVED METHOD OF COCAIN ANESTHESIA FOR NASAL MUCOUS MEMBRANES.

BY P. L. ANDERSON, M.D.
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Many of the unpleasant effects of cocain may be averted and much of the dread of operations may be dispelled by using the following method of local anesthesia.

As a preliminary step (preparatory for the application of a stronger solution) a spray of one-tenth per cent. cocain solution is used. In about half a minute, the same spray may be repeated and the thirty seconds between these two sprays may be utilized in arranging a very small amount of cotton on the probe for immediate use. Although this requires but a minute of time, the membranes are sufficiently anesthetized to allow the introduction of the probe without giving the patient any annoyance from the contact of the cotton with sensitive parts. The cotton on the probe has been moistened in a 25 per cent. solution of cocain. Anesthesia will take place in from three to five minutes, by rubbing the probe back and forth gently, but continuously, allowing the cocainized cotton to reach every desired part of the membrane. This simple process fully prepares the membranes for either acid cautery, galvano-cautery, snaring of polypi, or for any operation for ledge, spur or deflexion of the septum.

Formula for the stronger solution:

R.	Cocain.	℥ij	8 00
	Resorcin.	grs. x	65
	Aquæ distil	℥j	32 00

Five drops of this solution added to ℥j aquæ distil. makes the spray solution. This solution will keep indefinitely and does not crystallize around the stopper of the bottle, while the resorcin is antiseptic and adds to the anesthetic effect. The advantages of this method of cocain anesthesia are:

1. Saving of time, not requiring more than from three to five minutes, while the tampon method requires fifteen to thirty minutes.

2. The very small amount of cocain used, thereby lessening the toxic effect upon the patient.

3. The equal distribution of anesthesia produced by the gentle rubbing of the entire surface desired, as compared with the tampon which causes only the part touched by the tampon to be anesthetized, whereas the probe may reach and conform to every part of the membrane and produce a complete anesthesia. The cotton on the probe need not be renewed or replenished with cocain, for the admixture with mucous does not dilute or lessen the anesthetic effect, as may be supposed. It will also be found that this continuous friction is a much quicker process than by introducing the probe again and again at intervals of from one to three minutes. This not only requires more time, but causes more irritation and produces a toxic effect upon the patient, and a suspense or dread of cautery or operation often occurs from the unnecessary delay. The use of the spray, alone, for the complete anesthesia should be condemned, for the reason that too much unnecessary surface is anesthetized and too much cocain is absorbed. Should alarming symptoms from cocain occur while the patient is in an upright position, as for cautery, snaring, etc., lower the head as in fainting, loosen the clothing if tight, and usually a breath of cool air revives the patient. The use of stimulants or antidotes is quite unnecessary.

For operations, arrange the patient as for general anesthesia, using either operating chair or table. The prone position insures perfect safety against fainting, dizziness, nausea, etc., and is just as necessary in cocain anesthesia, as it is in general anesthesia when chloroform or ether is used. Special attention is invited to this point, for the writer has never observed, from any physician, the mention of this prone position in cocain anesthesia for operations upon the nose.

A CASE OF INFANTILE ATRESIA OF THE NASAL FOSSÆ, WITH UNUSUALLY RAPID RESPIRATION.

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Paul B., aged three months, was referred to me on Feb. 28, 1897. When born he was covered with eczematous scales, which at the time of his first visit had cleared up, with the exception of a few scaly areas on the scalp. He had been given bichlorid of mercury and iodid of potassium for the above condition by the mouth. He was apparently healthy and well nourished, but for the scales spoken of and his remarkably rapid breathing. His respirations were short and shallow, and numbered about 105 to the minute. His physician told me that he had had continuous rapid and noisy breathing since birth and occasionally had attacks simulating laryngismus stridulus. During these attacks his breathing became very labored; he became cyanotic, struggled for breath, and his condition became so alarming as to make recovery seem impossible. These attacks he had weekly, and at times oftener. It had always been necessary to feed him by a teaspoon on account of the difficulty of respiration. Examination showed the nasal fossæ to be almost absolutely closed. There was no discharge from them, but upon forcing a small cotton-tipped probe gently into the fossæ each was found to contain a thin isinglass-like scab, which extended posteriorly to just behind the vestibule. In spite of the almost total atresia of the nose, most of his breathing was through that organ. The smallness of the apertures being made up for by the rapidity of breathing.

Only the smallest probe could be introduced at first. On manipulating for a time with a cotton-tipped probe, it was forced back until it reached the rhino-pharynx, and by gentle but persistent pressure the passages were enlarged to (or even beyond) their normal size. At this visit a generous application of the official ointment of yellow oxid of mercury was applied through the fossæ, and upon all parts of the mucous membrane which could be reached. An ointment was ordered consisting of: Menthol (crys.), gr. iii; acid boric, gr. v; ung. petrolei, ʒi, with directions that a piece the size of a small pea be inserted into each nostril morning and evening of each day and allowed to melt and run into the nose. The bichlorid and iodid of potash were continued as well as the method of feeding by spoon. The child returned March 7 much improved; had not had its weekly attack of strangling since the first visit.

At two succeeding treatments, a week apart, the forcible dilating or bougieing was repeated and the result was a practical cure of the condition, the respiration at the last visit being very easy and about 45 or 50 to the minute.

An interesting feature of this case was the persistent effort to breathe through the nose, even though the respiration had to be increased to such a remarkable degree, in order te compensate for the narrowness of the fossæ, the case thus confirming the fact (long since pointed out by Kussmaul[1]) that children are essentially nose breathers, even when the nasal obstruction is extreme. In this case the tongue was drawn upward and backward, its base resting upon the hard palate and thus oral respiration was prevented, even though the lips were parted and the mouth open almost continuously. Although the relative size of the meatus of infants is very small[2] and but little swelling of the pituatory membrane would close the normal infant's fossæ entirely, still cases of such marked difficulty in breathing are rarely seen and more rarely reported.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

(*Continued from page 938.*)

VI.—LORENZ HEISTER AND CONTEMPORARIES.

Heister; Z. Platner; Günz; Ludwig; Mauchard; Kaltschmidt; Bass; Haller; Schulze; Eschenbach; Vater; Detlef; Holtzendorff; Eller; Senff; S. and A. Schaarschmidt; Muzell; S. Pallas; Z. Vogel; J. E. and O. J. Wreden; Schwarz; Walther.

Whilst in the seventeenth century the main supporters of German surgery were legitimate surgeons, the professors of surgery occupied the foreground in the first half of the following century. We will review them in order, beginning with *Lorenz Heister*, the first on the list of trained scientific surgeons in Germany. The great influence he exerted over the Germans was astonishing and he was considered so good an authority, that many believed themselves incapable of performing an operation better than he could, and thought it a crime to find fault with him.

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[1] Zeitschrift f. rationale Medicin, 1865, p. 107.

[2] Kohts and Lorent, Handbuch d. Kinderkrankheiten von Professor Gerhardt, 1878.

Heister, who was the son of an innkeeper, was born Sept. 19, 1683, in Frankfurt-on-the-Main. At the age of nineteen he entered the University of Giessen. Afterward he accompanied Dr. Möller to Wetzlar, where under his guidance he studied chemistry for four years but gave most of his attention to the study of botany. The great reputation which the Dutch school enjoyed induced him to go to Amsterdam in 1706, where at the time, Ruysch was the anatomist, Rau the city operative surgeon, both of the Verduyns and Couerding, instructors. Rau cheated the students; for instance, when Heister and two others desired to hear a course of his lectures, he charged them 100 specie thalers, half of which had to be paid in advance, but did not, as he had promised, produce the bodies. A number of these Ruysch then placed at the disposal of young Heister, who was thus enabled to continue his preparations and practice (operative) surgery. In the following year he went to Brabant, where he enlisted as a volunteer of the Allied Armies, and visited the hospitals of the English and Dutch armies in Brussels. While in Ghent he met Palfyn. In 1708 he heard Albin lecture in Leyden, and studied chemistry and ophthalmology with Boerhaave. He graduated the next year in Hardewyk and in his dissertation (de tunica choroidea oculi) he refuted the idea that the choroidea was a continuation of the meninges. Ruysch loved Heister like his own son and resigned his position as anatomist in his favor. The latter, hereupon, began delivering a course of lectures on anatomy and surgery, in the German, Latin and French languages. But, on account of his great fondness for surgery, he returned to military services among the Dutch, joining them in the siege of Tournay and Mons, in 1709. Here he had operations to perform and after the battle at Malplaquet was very busy attending to 5,000 wounded in Brussels. He remained five years in Holland, and then accepted a position as Professor of Anatomy, Surgery and Botany at Altdorf, entering upon his new duties after a sojourn of four months in Cambridge, Oxford and London. Heister taught in all the different branches of medicine and was so successful in his practice, that he soon rose to be one of the most famous physicians and the most sought-after instructor of surgery in Germany. His correspondence extended over many foreign countries and during his lifetime he found several biographers. In 1719 he was appointed Professor of Anatomy and Surgery at Helmstädt, but soon resigned this position and taught scientific medicine, botany and surgery. Here he founded a botanical garden and conservatory, which were classed among the rarities of that time. Several offers which he received from parts outside of Germany met with a refusal. Peter the Great tried to tempt Heister to accept a professorship in Russia with a salary of 2,000 rubles ($1,600); the archbishop of Würzburg was very liberal in his offer: $1,000 remuneration, "with an adequate supply of fruit and wine," and promised him, a Protestant, an undisturbed worship of his own religion; and Göttingen had striven to capture him as head professor of medicine, when her university was established; but all was in vain. An offer from the Duke of Holstein to come to Kiel, as well as a Professorship in Rostock, Heister also declined. He retained his position as the Most Illustrious Court Councillor of Braunschweig-Lüneburg and become a member of scientific societies at home and abroad. Heister was a good Christian, very amiable in his intercourse with mankind, and of a most obliging disposition. His lectures were very deep, thoroughly prepared and explicit. April 18, 1758, while on his way to Bornum, whither he had been bidden for a consultation, he died, in his 75th year, a most renowned man. "He was an adult in sagacity, experience, piety and worth, but a youth in society and in his intercourse with human nature." This is a quotation from the funeral sermon delivered at his grave in Stephani Cemetery in Helmstädt. Although a famous anatomist and botanist who did not share Linné's revolutionary ideas, he merited the greatest honors as a surgeon. With great fervor he fought for the combining of surgery and medicine, and in 1718, when he was thirty-five years old, wrote the most complete and most famous book then existing. Its title was, "Surgery, in which everything that pertains to the same is thoroughly discussed according to the latest and best methods and which contains thirty-eight copper-plate illustrations of the newest and most useful instruments, besides the most convenient positions of the hand in surgical operations and in applying bandages." (The 5th edition comprises 1078 pages.) How great Heister's literary influence was, may be inferred from the fact that this book, which Benjamin Bell termed the "First complete systematic work on the science of surgery," was still used as a text-book in Vienna as late as 1838. One hundred and twenty years it had served as a means of education for the young! That surgery was so superficially carried on in Germany and that the most important operations were performed by quacks and vagabonds, Heister considered mainly due to the want of a complete manual. Furthermore most of the text-books on surgery had been written by physicians who had never learned the art of operating or by uneducated surgeons. At first Heister had his work copied by his listeners, but yielding to their urgent requests had it printed later on; he wrote it in German on account of the German surgeons, but afterward caused a Latin edition to be printed for the sake of foreigners. Translated into many tongues his production was prepared according to the best home and foreign authorities and fraught with his own experiences. In the same, Heister divided surgery into three parts: The first, treating of wounds, fractures, dislocations, swellings and ulcers; the second, of operations, including ocular and obstetric operations, and the third, of bandages, thus making a distinction between medical surgery and practical surgery. The former was: The theory, that is, the science of how to cure and perform operations without making any; the latter was the actual practice, that is, the art of how to operate." A true surgeon ought to know both, a physician, at least, the theory. Heister neglected no opportunity to call the attention of the young people to the great extent and the difficulty of surgery, to spur them on and to recommend to them the study in large hospitals and on the battle field. He also very warmly urged them to study anatomy and, in a special dissertation, pointed out that the sad conditions of German surgery principally resulted from the neglect of that science, of which a surgeon has so much more need than a physician. He did not cling to principles, for he knew that "the general doctrines of surgery are often harmful, unless one has recourse to those of special cases and eminent exceptions." His love for truth he proved by publishing his failures as well as his successes; he did not hesitate to

openly confess that, in connection with a difficult birth under the impression that the child was dead, he had placed a grapple into its head and drawn it out alive, whereupon it died within three days. The most unfavorable side of Heister's accomplishments was that he was no critic. In his "Surgery" he simply placed the different opinions and methods side by side without passing judgment on them, leaving the young people without any guide in the matter. He also did harm by describing and illustrating instruments and bandages that were valueless; he once for all considered a knowledge of instruments a "general necessity" for every surgeon. It also appears that Heister was more of a scholar than a teacher, there being nothing known of any famous pupils, except Mauchard; partly due, perhaps to the smallness of his sphere of activity in Altdorf and Helmstädt. As an abstract of his great work on surgery, a small one was published in 1747. Also his work on anatomy created a great stir in 1717. This, translated into several different languages, was one of the principal text-books of the times. Heister wrote 200 different works. Even when seventy-one years old he noted medical, surgical and anatomic observations, and compiled a work in which he related all the strange things that came to pass during his "fifty years' experience," 680, mostly common occurrences succeeding each other chronologically from the time of his college life up to his settlement in Helmstädt. While this was being translated, Heister died, so Professor Cappel of Helmstädt published the same, which was not much of a credit to the departed one, for most of his experiences from 1721 to 1758 had been somewhat hastily and incompletely recorded. We will here insert his services to ophthalmology and obstetrics, because these sciences will not be taken into consideration later on. In dissecting an eye infected with a cataract, Heister found that the disease was not, as had been generally accepted, caused by an abnormal skin in the eye, but by a darkening of the lens, which had become cloudy by a preceding inflammation. This observation, which he published in 1713 and afterward defended in dissertations, involved him in a quarrel with Woolhouse for many years. While Mauchard shared the opinion of the latter, St. Yves, Platner and Morgagni sided with Heister, whose idea was soon received as correct. He admitted the existence of cataracta capsularis and held the opinion that glaucoma was a darkening of the vitreous humor. In case of a fistula in the aqueous humor, he advised the use of Anel's method in 1716, hitherto unknown in Germany. In obstetrics he deserves great praise for insisting upon Cæsarean section when a woman died in childbirth, as the infant might live if removed. To obtain this end he demanded of the state to pass a law as the prejudices among the laity were still very great; for, did not one peasant in Helmstädt threaten to shoot Heister if he dared to open the body of his deceased sister?

Less famous than Heister was *Zacharias Platner* (1694–1747), although we can not deny that he merited praise for his efforts in trying to free German surgery from its chaos of empiricism and arrange it in a scientific way, as well as to systematize the same. Educated in Paris, he was appointed professor of anatomy and surgery in Leipsig in 1721. His "Institutiones Chirurgiae" (1745), written in classic Latin was, along with Heister's "Surgery," the most valuable text-book in Germany, which had been introduced in most of the universities and was used by nearly all surgeons. Clearness of expression, good judgment and the special use made of the French literature were distinguishing features of the same; on the other hand though, it was deficient in experiences, unquestionably Platner's weakest side. It is characteristic of the times, that in the German edition, many theoretic and literary examinations, which are found in the Latin books, are omitted, because German surgeons were too ignorant to comprehend them or to manifest any interest in them. Platner divided surgery into six parts: 1. Synthesis, including the fractures and dislocations, bandaging, the healing of wounds, etc. 5. Dieresis, the section, sawing, trephining, cauterizing, etc. 3. Exeresis, with the extirpations. 4. Apheresis, with the amputations. 5. Prothesis, to which belonged the application of artificial feet, the setting in of teeth and eyes and the filling of cavities. 6. Diarthrosis, straightening of the deformed members of the body. Platner urged the combination of medicine and surgery. He was one of the most learned and popular physicians of the time. When he died he bequeathed the professorship of anatomy and surgery to his favorite pupil, *J. Gottfried Günz* (1714–1754). A Saxon by birth and educated in Leipsig, he began here as an unsalaried professor, then spent a year in Strassburg and Paris, attending, principally, the lectures of le Dran, Guerin and St. Yves. In 1747, he was appointed professor of physiology in Leipsig, but soon thereafter taught anatomy and surgery. He then went to Dresden, 1751, where he accepted a call as private physician. Having an excellent knowledge of the ancient classics, he was entitled to a most promising future, but, unfortunately, he died young. Among other works, he published one on hernias ("Obs. Anat. Chir. de Herniis, 1744), the first and best of its kind written, and scarcely surpassed by any today. The third learned professor of therapeutics from Leipsig worthy of mention was *Gottlieb Ludwig* (1709–1773). He followed in the footsteps of his two colleagues, taking charge of the anatomy and physiology and was a true ingenious representative of the times, inasmuch as he wrote a Latin compendium, comprising all the various branches of the medical sciences (physiology, pathology, general therapeutics, medical jurisprudence and surgery). He instructed the barbers of Leipsig in the fundamendal principles of surgery, in consequence of which he published his "Institutiones Chirurgiæ" in German. This book, which contains many citations from Heister and Platner, was exclusively used at that time, not only by Germans but also by foreigners.

In Tübingen *David Mauchard* (1696–1751) taught anatomy and surgery. He was a pupil of Heister, with whom he lived and whose day of death was his birthday. He continued his studies in Strassburg, then attended the lectures of Duverney, Winslow and Petit in Paris. Here he lived with Girard, the surgeon of the Charité, where he had a chance to practice operating. For nine months he and Platner visited the lectures given by Woolhouse on ophthalmology in Paris. The latter had invented an eye-brush for the lids, but which he kept secret. Now Platner, who was originally wealthy, possessed himself of the same by paying a high price for it, while Mauchard, who was poor, learned it by strategem. Woolhouse was very fond of wine, and one day when Mauchard had treated him several times, gave away

the secret while under the influence of liquor. Mauchard settled in Tübingen and obtained a salaried professorship in 1726. Having made a specialty of ophthalmology, he wrote mostly ophthalmologic works, which can be found in Haller's collection; he also wrote a treatise on hernias in 1748. The University of Jena had a most estimable teacher of surgery in *K. Friedrich Kaltschmidt* (1706–1769). After pursuing the study of jurisprudence for two years, he took up medicine. He became the physician of the Duke of Weimar. He then was an unsalaried professor, and after eight years advanced to the position of salaried professor, at first receiving no salary and having no authority. He taught practical medicine, jurisprudence and surgery, always having a good attendance. A great number of Latin works, which are very verbose, bear his name and are found in Haller's compilation. In order to obtain certain solutions he experimented on rabbits, inflicting similar liver wounds to one he had successfully treated. Kaltschmidt was a very fearless operator, as shown by his extirpation of a large tumor of the neck (goiter), but in removing the same he had the misfortune to cut the carotid and not being able to stop the bleeding, the patient died.

Heinrich Bass (1690–1754) born in Bremen and educated in Halle, Strassburg and Basel, was made professor of surgery in Halle in 1718. He published the first German work on bandages, illustrated by twenty copper plates in 1720, which was received with great approbation. Although written according to the ideas of Verduc, the distinguishing features were the concise and intelligent language used and the perfection of its illustrations, beside containing much that was new. Bass and Heister were the first men in Germany who laid particular stress upon good bandages. Of less value are his "Illustrated Bric-a-Brac" (1728) and his "Obstetric and Anatomic Surgery" (1731. In Göttingen, the famous *A. von Haller* occupied the professorial chair of surgery for seventeen years, but never dared to perform a single operation on a living person, a remarkable circumstance for one engaged in surgical work so long (etsi chirurgicæ cathedra per septemdecim annos mihi concredita fuit, etsi in cadaveribus difficillimas administrationes chirurgicas frequenter ostendi, non tamen unquam vivum hominem incidere sustinui, nimis ne nocerem veritus. "Bibl. Chir." II, p. 171). People did not hesitate to take heroic medical treatment, but shrank from the simplest surgical operation. Haller contended that not a single great man had distinguished himself so that a period of surgical history might be named after him; besides surgery had ever been dependent upon medicine and without it could make no progress. Haller's principal works were five volumes of "Disput. chir. selectæ" (1755–1760) for which he had collected 163 surgical treatises, partly complete descriptions of diseases and partly of rare cases and new instruments. The first volume contains twenty-nine dissertations on injuries of the head; the second, twenty-eight on diseases of the head, throat, chest, etc. These dissertations by Haller as well as the surgical works of the Richter collection, which appeared later on, probably most fully utilized the least valuable parts of surgical productions in Germany, during the past century. Another valuable work by Haller is his history of surgical achievements, in two volumes (Bibliotheca chirurgica, (1774), in which he passes criticism on all surgical journals published up to his time and comments on the editors of the same. Professor von Creutzenfeld of Vienna compiled a similar work in 1781. Of the rest of the German university professors belonging to the first half of the 18th century scarely one deserves mention. But there was Heister's successor in Altdorf, *J. H. Schulze* (1687–1744), a poly-historian, who taught also Greek and Arabic, then went to Halle to teach medicine and eloquence and among his great literary works also produced a compendium (Chir. 1747). Prof. *C. E. Eschenbach* of Rostock in 1754, so sharply separated medicine from surgery that he did not wish internal remedies mentioned in surgical journals, contending that they were of no concern to a surgeon. The physician alone was to care for the remedies of external diseases and in disputed cases, his idea was to prevail as had been decreed by the state. He was also greatly in favor of specialties in surgery and thought it by far better for a surgeon to pursue but one branch of operative surgery, as daily observations had proven that the most uneducated oculists and dentists often performed operations in their line faster, more fearlessly and successfully in consequence of their great amount of practice than the others. *A. Vater*, professor in Helmstädt, wrote a "Museum Anat." in which he narrates several strange surgical cases (1750). Haller's pupil and demonstrator in Göttingen, *P. Detlef*, was one of the first to attempt the production of callus from bone humor and the vessels of the callus (ossium calli generatio, 1753).

One might expect Berlin, so rich in material on account of the great preference given the Charité over many universities, to have good surgeons, but there was nothing more supplied here than barber surgery. A progress in the sciences could not be looked for from King Frederick I., who appointed his executioner as body physician. His successor, Frederick William I., who declared himself to be very German in his ideas, did not wish to have anything to do with those roguish and flitting French. This may have been a very brusque remark on the part of his royal highness, who was rather indifferent to science, so that he considered Leibnitz of no account; nevertheless, he did much toward furthering the development of medicine and surgery by founding the Charité and by establishing the collegium med. chir. in Berlin, as well as by his famous edict regarding the medical system. Having a great fancy for tall people, such as were found among his grenadier guards at Potsdam, he attempted to raise a tribe of giants, by procuring very tall mates for them. The experiment, however, proved a failure. The surgeons also were measured, but it has been especially noted that Henckel, although not very tall, received the appointment of field surgeon of the regiment at Potsdam. There was great danger of their being put into a strait waistcoat. When Theden was made field surgeon of the Holstein regiment, his commander wanted him to be a fusilier on account of his height, but he narrowly escaped through the interference of the surgeon of the regiment, who furnished him with a pass to leave the city. Several physicians and surgeons of the Charité were highly esteemed by Frederick William I. The surgeon of the staff, *Holtzendorff*, had founded the anatomic theater in Berlin, as well as furnished the plans for the Charité and the Collegium Med. Chirurgiæ. Frederick's body physician, *J. Theod. Eller*, also had a part in the erection of the Charité, wrote out reports on the operations performed there

in his "Med. Chir. Remarks" (1730), and besides this compiled a "Complete Surgery" (1763), which, although of no great value, was published three years after his death. One of his co-surgeons at the Charité, *G. Senff*, did not write anything, but invented a knife for the operation of the seat fistula and a compress for aneurysms. Eller's successor as physician, *Samuel Schaarschmidt* (1709–1748), at first studied theology in Halle, then medicine, and in 1736 became professor of physiology and pathology at the Colleg. Med. Chir. In all the various branches he was a prolific writer; besides his "Accounts of Berlin," we have a short sketch and view of the human body (1736), a treatise on diseases of the bones (1749), on venereal diseases (1750), a book on obstetrics (1751), a physiology (1751), a dissertation on military diseases (1758), prescriptions (1768), and on wounds (1763). In general, he represented good surgical principles. His brother, *August Schaarschmidt*, professor at the University Bützow of Mecklenburg, compiled anatomic tables or synopses, which were extensively used. Samuel's successor at the Charité was the body physician *Muzell* (1715–1784), who, in the absence of the head surgeon, also attended to his duties. A few of his remarks ("Med.-Surgical Observations," 1754, 72) show very plainly how ignorant the Prussian army surgeons were, but more of this hereafter. Muzell's surgical colleague, Professor *Simon Pallas* (1694–1770), noted as a good operator, wrote a "Guidance for the Science of Practical Surgery" (1763), in order that the students need not spend any of their valuable time in copying. In this he described clearly and concisely the principal operations in twenty-two chapters. As a hint on operations, he made the rule not to operate, when certain that thereby the disease could neither be cured nor mitigated; on the other hand, if a cure could only be effected by a dangerous and doubtful operation, it would be better to undertake the same than to keep one's hands in his pockets. Besides, he published practical directions for treating diseases of the bones, advising gentleness when handling fractures and luxations.

Not one of the surgeons of that time became especially noted. The surgeon at Lubeck was *Zacharias Vogel* (1708–1772), who wrote a work on hernias ("Dissertation on all Kinds of Fractures," 1738) which was considered valuable then, but today is worthless, and in which, among other things, he fought against castration by surgeons. Furthermore, there exist from his pen, "Strange Tales of Patients" (1756), and an "Anatomical Surgery and Medical Observations" (1759). The following is an example characteristic of his surgical maxims: In a case of hydrops scroti, he made a puncture and set the patient's dog to lick the wound, looking on as a highly amused spectator. The swelling went down, but the dog had a terrible vomiting spell, whereupon Vogel gave him milk to lap, then the sucking was continued until the swelling disappeared the following day. Sound surgical opinions were expounded by *J. Ernst Wreden*, private and the general-staff's surgeon at Hanover, of whom we will again speak in connection with vaccination. In his "Collectanea Chirurgiæ" 1722–23) he imparted his observations on a thrust wound made in the heart, on gangrene caused by a cut in a corn, gangrene of the penis after gonorrhea, on the extirpation of an eye, on the successful excision of a ganglion, the healing of aneurysms of an arm by means of the split and double ligatures, and on others; for a broken lower jaw he had a tin box made. He also wrote a very unimportant work bearing the title, "Surgical Military Chest" (1722), comprising forty years of his experience as army physician, and detailing medicaments, instruments, etc. His son, *Otto Just Wreden*, the above mentioned publisher of the first German topographic anatomy, as well as other anatomic and physiologic works, wrote some very superficial directions for the practice of surgery and caused a new edition of his father's "Military Chest" to be illustrated. Of no consequence were the surgical remarks by the Schleswig-Holstein surgeon *J. C. Schwartz* (1713), nor the "Medical and Surgical Treasure," by *C. L. Walther* of Halle (1715).

It must be confessed that among the best German surgeons of that day, there was no special genius, who might have opened a new career for surgery, or by means of prominent discoveries, or the establishment of new views promoted it as a science. Rich in learning, but poor in ideas, they followed the trail delineated by the French and English, which they often lost. This censure in no wise diminishes the credit due the few, to whom German surgery owes her first scientific and methodical cultivation. Heister did much to advance and promote surgery in Germany, but comparatively little toward its progress as a science. This period, in which the learned mass of physicians was prepossessed by prejudice, superstition and credulity, when many a writer gathered only such observations as confirmed his pet ideas (hobbies) and omitted everything that did not agree therewith, and when they even invented stories of patients for base purposes, such a time must retard the growth of surgery. What little culture some of our best forefathers possessed is proven by several publications of self-operations, to which an artless child would hardly pay any attention, did they not throw some light on the easy belief, or rather the falsity of the authors. Thus Holtzendorff, surgeon of the general staff, related to Professor Schaarschmidt a case of self-amputation which, according to the patient's testimony, was legally authenticated. A man, 76 years old, said that forty-five years ago, he cut off his own leg. Sphacelus set in and the flesh of the foot began to decay. A physician promised to amputate it, if he would support him with three servants and four horses. This was impossible. The patient now fastened a bandage as tight as possible above his knee and began to saw off his leg below the same with an old saw. Not succeeding, he tried a sickle, and finally the files of a locksmith, his wife holding his leg, and so he filed it off. Having recovered from a swoon immediately after the operation, he washed the wound with urine and bandaged it with sugar, alum and wintergreen. Nine months later the wound had healed. Schaarschmidt published this story in his "Accounts of Berlin" (1740, p. 6) and defended the authenticity of the same. Another case of "Table Surgery" was a self-made cut into one of the testicles, which can be found in C. L. Walther's "Medical and Surgical Treasure" (1715, p. 196). A surgeon in Koenigsberg related that a cooper's apprentice, 21 years of age, had himself made a cross incision between the testicle and the penis and after passing off the urine had felt the stone with his finger. He enlarged the cut and removed two hundred stones, then felt a still larger one and increased the size of the fissure. Deeming death inevitable, he wished to see the stone that

had so long tortured him. After the third cut he procured a sprinkling can with which he rinsed out the remaining pebble, then hunted a needle in his mother's sewing basket, but found none, to sew up the wound. After two days he summoned the surgeon of Koenigsberg, who cured him, and at the end of six weeks he was able to resume his work. Another one of these farcical cases of self-operation is mentioned at the end of the century. This time the hero was the English Colonel Martin of India, who used a file to extract the stone in his bladder. Into this the daring officer, it is said, inserted a thick steel wire, which was in an elastic catheter and to the convex end of which was fastened a file as thick as a straw, and so filed through the stone. During this procedure he squatted down in order to move the stone nearer the neck of the bladder and injected lukewarm water. This operation he performed three times within twenty-four hours, until the stone was pulverized (Arnemann's Magazine Wound Medicines; ii, p. 413, 1799).

SOCIETY PROCEEDINGS.

Association of American Physicians.

Twelfth annual meeting held at Washington, D. C., May 3, 5 and 6, 1897.

(*Continued from page 954.*)

Dr. J. M. DA COSTA, President, in the Chair.

Dr. W. T. Gouncilman of Boston spoke of the frequency of finding the typhoid bacillus in the gall bladder. Indeed he said it was almost always present. The bacillus entered the gall bladder from the blood. They are always in the liver, that is practically always and there are very few organisms in the blood which can escape the liver; they can easily pass into the bile vessels. He then showed some beautiful specimens of typhoid ulcers.

Dr. James Tyson of Philadelphia, then read a paper on "Urea Estimations in Cases of Typhoid Fever Treated by the Brand Bath Method." He spoke of a case of typhoid fever which came into the hospital and on the third day after admission he found albumin and hyaline casts; he gave milk and liquid diet and then on the fourth day he began the use of the Brand treatment, at the same time he collected the urine which he found contained 2.9 per cent. of urea; during the bath treatment the secretion was markedly increased. For instance the patient was tubbed five times and found the urine and urea were increased; again on the twenty-eighth day there were 2100 c.c. of urine and 29.8 per cent. of urea; on the twenty-ninth day there were 2100 c.c. of urine and 24.7 urea; on the thirtieth there was 2280 c.c. urine and 32 of urea; the albumin fell to one-twelfth of the bulk and then disappeared, as did also the casts. At first expectoration was copious but later the cough grew less and there were no tubercle bacilli, but otitis media developed in both ears but there was no defect in the hearing. The nephritis became much milder and was what Stockton calls an upper renal complication; such a condition would not prevent him from using the Brand method. There is no stagnation of the blood in the body during the bath treatment but the blood flows rapidly through the kidney and thus can do no harm in the congestion of the kidney. Many other persons also use the Brand treatment in nephritis; of 138 soldiers in hospital suffering from typhoid fever 69 were treated with the Brand method, 5 having nephritis and none died and 69 without the Brand treatment; 9 had nephritis and 5 died. The urea can come from two sources; from the amount of nitrogen ingested through the food taken or it can come from changes in the tissues.

Dr. George Dock of Ann Arbor, Mich., then read a paper on "Cancer of the Stomach in Early Life; and the Value of Cells in Effusions in the Diagnosis of Cancer of the Serous Membranes." The report was of a cancer of the stomach (scirrhus) in a man of 19 years. There was extensive filtration of the stomach with early obstruction of the cardiac orifice. Metastasis in the peritoneum and pleura with fatty ascites; later, effusion in the pleural cavities, first left, then right. In the various effusions were cells which besides containing fatty granules and vacuoles, showed, in a large proportion karyokinetic figures, both typical and atypical. After a reference to the literature a comparison was made with the findings in other effusions in serous cavities, tending to give to such cells a certain diagnostic value. The paper was read in abstract, giving the salient points in the history and histologic examinations, with demonstration of specimens and drawings.

The case which he presented was one of typhoid in which there was a swelling in the abdominal region and a hard mass was felt. After drawing off about five liters of liquid, the mass seemed to have disappeared and at the postmortem a very small stomach was found and a tumor in the serous membrane; the patient was young and the fluid was of a thin watery consistency; this disease runs a slower course and remains longer in the stomach in younger persons than it does in older, so that an operation gives more chance for success. The diagnosis by the cells alone is not an easy one and it is much better if considerable portions of tissue can be obtained. The intracellular figures and the nuclei were very well shown in the drawing that he passed around.

Dr. Simon Flexner of Baltimore spoke of a case which he had examined in the autopsy room in the Johns Hopkins Hospital which was a large tumor extending into the intestines. There was some fluid which contained cells. The case was supposed to be cancer, but a very careful examination microscopically showed that it was tuberculosis of the peritoneum.

Dr. Francis Delafield of New York, then read a paper on the "Inflammation of the Colon," and in this paper he spoke of the various forms of colitis which ordinarily occur in New York and gave results in his experience as to the prognosis and treatment. He exhibited a large number of beautiful photographs. He divided the dysentery into acute, the climatic, ordinary and amebic. In the acute ordinary form there was no change in the intestinal wall, but there were two varieties in this; one was the mucous and the other was a serous condition.

1. The mucous variety is so rarely fatal that specimens can not be easily obtained. There is sometimes bleeding and the cells are covered with mucus, the lymphatic glands being swollen and inflamed; the cause is not known. A variety of organisms had been found and they were characteristic of impure drinking water and impure milk. High temperature of the air and overcrowding are the principal causes. The symptoms are local, little fecal matter passes but there is great rise of temperature. Some patients do not go to bed at all and others even continue their work. When the colon is affected then the condition is worse still. Adults usually recover, but children often die. The main treatment is rest in bed, careful diet, emptying the colon, relieving the pain with opium, weak injections of flaxseed in the rectum are the best means known. The disease may be chronic. There is usually no change in the mucous membrane but there is some thickening of the glandular coat.

2. The serous variety is characterized by large exudations of serum; these are not to be confused with functional disturbances of the colon. The disease is not fatal and he has never seen a specimen postmortem. This disease is very common in New York, especially before the heated weather, but it occasionally occurs in winter. Some are predisposed to it and have it summer after summer. There is a feeling of necessity to empty the bowels and the quantity discharged is considerable, sometimes as much as two quarts. A large number get well by a variety of treatment while others recover with no treatment at all and some continue in spite of every thing. He placed great reliance on castor oil, salol and opium. In this variety there is more or less infiltration in the connective tissues of the coat of the intestines. This tissue is much thickened, there is an inflammation in the upper rather than the lower part of the intestinal canal and the disease may last anywhere from a few days to a year. The treatment is not satisfactory.

3. In this there is an increased production of mucus and of serum and also a number of blood cells. There is a growth of the connective tissue with a certain change in the glandular coat. The inflammation is somewhat extended and there are many small superficial ulcers of microscopic size with overhanging edges. The cause is very obscure, the invasion may be sudden or gradual. Many of the symptoms appear on the first days and some may last for a few days, while others may continue their course for weeks and months. He has seen a case die in seven days; the prognosis is serious, the treatment should be begun at once, milk diet is necessary, good food, dry climate, rest in bed, irrigation of the rectum in the early stages and opium, salol and castor oil.

4. In the croupous or diphtheritic dystentery the treatment is much different; he had caused an artificial membraneous dysentery in dogs by administering to them large doses of corrosive sublimate.

5. Amebic colitis; of this there are two varieties. One is lymph inflammation and in one there are deep ulcers formed,

but the treatment is weak irrigations of the colon with quinin solutions.

Dr. D. W. Prentiss of Washington then exhibited "Two Cases of Erythromelalgia." 1. Female neurasthenic, aged 58 years. Left hand only affected. Has continued in intermittent attacks since August 1895, presenting, in a characteristic form, the train of symptoms described by Dr. Weir Mitchell as peculiar to this disease. 2. Widow, aged 37 years. Neurasthenic and hysteric. Pain in the heels extending to the soles of the feet and, when more than usually severe, up the calf of the legs. No history of previous disease, except the neurotic tendency, in either case, to throw light on the cause. Diagnosis, pathology and treatment will be discussed with special reference to relation to other diseases, classed as vasomotor. The treatment especially is worthy of note, since heretofore it has proved almost unavailing. While the reporter does not anticipate adding much in this direction, it is hoped other members with more extended experience will be able to do so, especially with reference to surgical interference, that having been contemplated in first case by cutting or stretching nerve in forearm.

WEDNESDAY, MAY 5.—SECOND DAY.

Dr. A. McPhedran of Toronto related "A Case of Pancreatitis Followed by the Formation of a Cyst." He spoke of a case which came to the hospital; he suffered from colic, jaundice, and had repeated attacks. During the next five years the attacks grew more frequent; he left the city for the summer and on coming back in the autumn gallstones were discovered and an operation was advised. On September 6 he suffered from pain, prostration and vomiting; the pain lasted three days; fever was 101 degrees. He began to improve later but was still uncomfortable; he was given Carlsbad salts and his diet was regulated. October 5 he had a pain over the pancreas; October 8 a large cyst was found over the epigastrium extending over the right of the pancreas; his temperature was 99.5 degrees; an operation was done and a clear serous fluid was evacuated. At the bottom of the wound the pancreas was found enlarged; the liver was healthy and the gall bladder was not reached. The opening was closed without drainage, with a pulse of 130 and temperature 101.5 degrees. Later he suffered from cyanosis and dyspnea. Ten days later a collection of purulent fluid was found in the lower part of the incision, probably due to fat necrosis. The pancreas seemed to have increased in size. In June he seemed to be much improved and went to his office, but his digestion was still disturbed and he had flatulence; the tumor had grown and was found pressing upward and forward; the urine was free from sugar. In March another operation was done and a cyst with walls 2 mm. thick was evacuated and a flocculent fluid containing albumin and leucocytes and being alkalin was found. There was no digestive ferment present. He made a good recovery, but the fistula persisted; the discharge was free and the skin was excoriated; the fluid was pancreatic in character and had some digestive powers. The general health of the patient continued good; the sinus continued and the discharge persists. The first attack and the subsequent ones were undoubtedly due to the beginning troubles of the pancreas. He then spoke of three kinds of pancreatitis, simple, hemorrhagic and suppurative.

Dr. J. H. Musser of Philadelphia then read a paper entitled "Angina Pectoris; Its Relation to Dilatation of the Heart." The paper was entirely clinical. The contention of the paper was to the effect that patients who have had an attack or attacks of angina pectoris are relieved of the paroxysms if dilatation of the heart supervenes. Often, if dilatation persists, the patient may live for years and no other paroxysm occur. It seems the pain, as long ago pointed out, is due in large part to the stretching of a tense ventricle from intra cardiac pressure. Such stretching is not so likely to occur in dilatation because of "safety valve action" in the heart. The idea appears to explain the infrequency of angina in the young; in mitral valvulitis with regurgitation; in women possibly, and in the occupants of infirmaries and hospitals. In the latter class the vigor of the heart muscle is lessened from lack of food, etc., which obtains in the better class. Certainly it is not because of the absence of atheroma of the coronary arteries, for endarteritis is very prevalent among senile, usually alcoholic, perhaps syphilitic inmates of the hospitals and almshouses.

If the contention is true, the diagnosis, prognosis and the treatment, tentatively admitted, is influenced thereby. The diagnosis, in that angina like paroxysms in dilatation of the heart are probably not due to true angina pectoris. The prognosis, in that, if, as rarely happens, an undoubted attack of angina occur in a case of valvulitis with dilatation, and even failing compensation, the patient on the one hand is not likely to perish from the angina, because of the safety valve, while on the other hand, it indicates that there is sufficient strong muscle fibre to insure cardiac recuperation. Further, if a patient subject to attacks of angina presents signs and symptoms of dilatation, the angina will disappear, or at least never be so severe as to terminate fatally.

That the pain is due to intra-cardiac pressure is more possible because of the presence of dilatation of the heart in angina sine dolore. Attention is called to a similar association of pain with increased tension of the globe, in acute glaucoma.

In connection with the above the writer showed the influence of "safety-valve action" in the relief of some peripheral symptoms of high arterial tension.

Dr. Wharton Sinklar of Philadelphia said that the question as to the cause of the pain in this trouble was of great interest; and Dr. Musser's explanation did not seem to be entirely satisfactory. We have also a pseudo-angina with pain and a great discomfort and he related a case of the kind in which one grain of morphia was given and failed to relieve and there was no evidence of disease of the heart at any time.

Dr. J. C. Wood of Philadelphia asked what was the cause of the increased intra-ventricular pressure. The pressure in these cases can not come from any condition of the heart itself. If the pain of the angina pectoris is due to increased intra-ventricular pressure, then one would expect the arterial symptoms to play the chief role and not the heart. Nitrite of amyl is interesting in this connection; it relieves the aortic pressure and takes away the resistance of the heart. In digitalis it is noticed that the action is not good in this disease. If Dr. Musser's theory is correct then angina could be stopped by hypodermic injections of tincture of aconite, or if we gave enough aconite we could do away with the ventricular pressure altogether, but this is only theory.

Dr. E. G. Janeway of New York mentioned several cases. One was a man who was much frightened in an accident on the railroad; he went home and complained of a pain in the right side and not in the left; he was ashy pale and had pericarditis. The diagnosis was made of thrombosis of the coronary artery with rupture of the heart. One day as he was feeling better he suddenly sat up in bed and died. At the autopsy the coronary arteries were found diseased and the septum of the left ventricle was ruptured and there was a thrombosis in the right coronary artery. Dr. Musser's theory does not explain this. In the second case a man walking across a field was suddenly taken with a sharp pain in the side; he died in three weeks, alone, and at night under rather suspicious circumstances, and poisoning was suspected. At the autopsy both of the coronary arteries were found thrombosed and the left lesion was found to be older than the right, showing that one attack had antedated the other. He also referred to other cases and to the effect of nitroglycerin on persons with low arterial tension.

Dr. Charles Carey of Buffalo spoke of this increased tension of the heart as parallel with the increased tension of glaucoma. He thought that Dr. Musser's theory was open to question and did not fit every case.

Dr. F. R. Kinnicutt of New York said that his theory might explain some cases, but he said there was often great pain in which the heart walls were stretched.

Dr. Musser said in conclusion that he did not mean to refer all cases of angina pectoris to this cause, but he wished to lay stress on the fact of the safety valve action of the mitral valve; the pain was certainly decreased.

Dr. F. C. Shattuck of Boston then read a paper entitled "Pericarditis; Some Points in the Diagnosis and Treatment." He said that pericarditis was frequently overlooked and was often not sought for. The disease was one that was well known and rheumatism was often the cause, as endocarditis and pericarditis may co-exist. So often in the beginning of the disease the doctor does not see the patient. It often follows pneumonia. In fact the two are often associated. The diagnosis must rest on the physical signs, but the friction sound is very much circumscribed and may come and go between each examination; it may be present one day and absent the next and *vice versa*. He had seen several cases in which pericardial effusion had been suspected after pneumonia and had been carefully looked for but not found until after the autopsy. Dry pericarditis without friction sound is also hard to make out. The shape of the dulness in his experience was not pyriform or triangular but similar to that of enlargement of the heart. He had been able to map out the shape of the heart itself in many cases in the cadaver in carefully percussing the chest wall and then sticking pins at the edge of dulness and thus he mapped out the exact shape of the heart. The changes in the percussion sound are of great importance; the pericardium sound is not often prominent and is easy to make out when the lungs are retracted away from the heart. If the treatment is other than rest it is of little use. The effu-

sion will increase without the resort to remedies. He used opium for rest, alcohol for stimulant, but did not advise blisters. Ice pack was very well for the comfort of the patient. He tapped seven cases and six successfully and in two was sure he saved life. Removing a small amount of the fluid will often cause absorption of the rest. There is no strict rule when to tap. Each case must be studied itself, but the point of election for tapping is in the fifth space, one to two inches to the left of the left nipple. In one case he withdrew 16 ounces and in another 36.

Dr. James T. Whittaker of Cincinnati, spoke of the latency of the disease, and said it is often not recognized until the postmortem. He thinks that the clear fluid often indicates a tuberculosis. He lets the stethoscope hang in his ear allowing the top just to touch the chest of the recumbent patient. He punctured in every case he suspected; he preferred the second or sixth left interspace as he had gotten fluid there when he could not get it anywhere else. He always feels the heart with a trochar.

Dr. G. L. Peabody of New York, spoke of the importance of selecting the right place for tapping and mentioned one case of his in which he passed the trochar in the sternal cartilage.

Dr. H. A. Hare of Philadelphia, said that the danger of hurting the heart muscle was not very great and spoke of his experience on dogs in which he stabbed a number of dogs in the heart and on examination after death found the wounds healed and little blood in the pericardium. He thought the result would not be fatal unless the heart centers were stuck and this was not likely. He mentioned a case in which tapping a man the trocar had pierced the heart, and later when the man died the wound was found almost healed. He asked the members if they thought digitalis was the best heart stimulant to give in this trouble.

Dr. Rotch of Boston, said that Dr. Hare's work agreed with his own. He said that it was hard to make a diagnosis in these troubles but as the effusion flooded the heart upward the tapping would naturally have to be done below. It is always better to avoid the heart if possible. He said that the space just below the scapula was a good place to tap.

Dr. James Tyson of Philadelphia, thought it was very easy to outline the pericardial effusion and he felt sure that we got the triangular pericardial shape in most cases. He thought that Dr. Shattuck was too literal. He wanted to refer to the utility of the phonendoscope in making the diagnosis. He thought as a means of mapping out internal organs it would prove very useful. We ought not to let the blister go; it will often save tapping. He had never tapped a pericardium but when Dr. Shattuck finished his paper he felt as bold as a lion and ready to tap the first case, but since the others had spoken he had lost his courage.

Dr. A. McPhedran of Toronto said that the myocardial infection should be considered; it was often the chief disease.

Dr. E. G. Janeway thought that we could always make out the pyramidal shape and referred to a case of puncture of the heart in which the patient died.

Dr. Shattuck said in conclusion that there was only one case in which the fluid was not obtained. There were some dry taps but they all afterward proved productive except one.

Dr. M. H. Fussell of Philadelphia, then read a paper on "Pneumonia in Private Practice." The paper embraced a series of cases treated privately in which accurate notes have been kept. They were analyzed and deductions as to mortality, symptoms, physical signs and treatment made.

Dr. J. E. Graham of Toronto, then related "Two Cases of Broncho-Biliary Fistula." The further history of a case of broncho-biliary fistula which was reported at the first meeting of the association. A second attack occurred after an interval of ten years. The patient coughed up large quantities of bile, almost daily for a period of eight months. Great loss of flesh and strength. A cholecystenterostomy. Gall-stones were found. Death from cholemia and hemorrhage. Short notes of some similar cases. Some remarks on the pathologic anatomy of such cases. Notes of a second case of broncho-biliary fistula in which the lesion followed a traumatism.

Dr. Beverly Robinson of New York, then read a paper on "Diagnostic and Therapeutic Considerations with Respect to Certain Diseases of the Upper Air Tract." He spoke of the utility of the laryngoscope and rhinoscope in throat trouble and said that throat surgeons had been largely led away by fads, one of which was that a deviated septum must always be either cut through or perforated. Another one was that the turbinated bodies must be cauterized, cut, etc. In spite of all these fashions these troubles still continued. But the specialist should remember that the nose and throat alone should not be treated but the general health should need attention. Many general practitioners can just as well treat the simple throat and nose disorders as the specialist, but it is only in special operations and the more delicate manipulations that the specialist should be called in. It should be remembered for instance in an affection of the pharyngeal tonsil rheumatism plays a part so that the salicylates and colchicum are indicated. Thus the specialist and the general practitioner must work together in the treatment of these cases.

Dr. J. C. Wilson of Philadelphia, then read a paper entitled "Nervous Deafness in Diphtheria; a Case." The abstract is: —Follicular tonsillitis in an adult: Moderate fever, occipital headache, tinnitus aurium et cerebri; fourth day, dense pellicular exudate upon right tonsil, conjunctivitis, increasing tinnitus and deafness, injection of diphtheritic antitoxin serum; a few hours later, total deafness with slight vertigo, great chemosis; gradual defervescence completed by the thirteenth day, at which date there was partial paralysis of accommodation together with paresis of the extensor muscles of the head, persistent tinnitus, slight vertigo and absolute persistent loss of hearing. The following topics were considered: The rarity of the case, its importance, the antitoxin injection, the general subject of sudden nervous deafness in the infections, theoretical considerations, diagnosis, prognosis, treatment.

Dr. Beverly Robinson of New York said it was an interesting and unique case and very fully reported. It is also interesting from the standpoint of certain cases which he had seen; cases in which the Board of Health diagnosis had rather led him astray. While it is very gratifying to know from the Board of Health that a certain case is not diphtheria, still in a number of cases he had told the parents of the patient that it was diphtheria, and treated it as such. We must pay more attention to the clinical diagnosis than to the pathologic report of one who has never seen the case. Too much importance is paid to the personal investigation of certain individuals who are skilled in technique, but who never see the patient.

Dr. I. E. Atkinson of Baltimore said that in reporting cases it was well to look at them carefully and see that no link in the chain of the history was wanting. In this case the bacillus was not found. Could we account for these symptoms in another way? It might have been some form of septic meningitis, and which looked like deafness of cerebro-spinal meningitis. He had been called in to see a child 14 months old who had a slight rash over the body, and later had a patch on the tonsil. The staphylococcus was found; the temperature was up to 105 and 106. This was reduced by baths. The child finally recovered, but was deaf in both ears.

Dr. M. H. Fussell of Philadelphia also reported a case of deafness with obscure symptoms.

Dr. W. W. Johnston of Washington said this was an era of anomalous cases, and he thought many of them were all due to epidemic influenza, which took on so many different shapes. He thought that Dr. Atkinson's case was certainly influenza, and probably Dr. Wilson's, but this was merely a suggestion. We know how profoundly the nervous system is affected by this disease.

Dr. J. C. Wilson said in conclusion that there was certainly a link missing in the demonstration of this case, but it does not seem worth while to go out of the way to make a diagnosis, although the diphtheritic organisms had not been found. Germicides had been used and the patient had been carefully isolated. He had also seen a great many anomalous cases of influenza, but he had not seen a case like this.

Dr. J. P. Crozer Griffith of Philadelphia then read a paper on "Types of Edema in Infancy and Early Childhood." The author discussed the obscurity which attends many cases of edema occurring at this time of life. He referred first to the possibility of nephritis being present in earliest infancy, and then took up the question of the production of nephritis by congenital syphilis. He reported two cases seeming to be proof of the occurrence of this form of renal disease, and referred to some instances from medical literature. The existence of nephritis in an infant as one manifestation of general septic infection was instanced by the report of a case. Edema consecutive to heart disease and to marantic conditions was then touched upon, and then that going by the name of edema neonatorum. The relation of this condition to sclerema neonatorum was next considered and an instance of the latter reported. He then reviewed the cases of sclerema occurring in America. Next angioneurotic edema as seen in infants and children was reviewed, and the various reported cases abstracted. He reported two cases occurring in his own experience. Finally, instances of edema of entirely doubtful origin were taken up and two unusual cases detailed. He also exhibited some beautiful normal and pathologic specimens in which the colors had been preserved.

Dr. D. D. Stewart of Philadelphia then read a paper on 'A Further Communication on the Occurrence of a Hitherto

Undescribed Form of Chronic Nephritis, Unassociated with Albuminuria." This paper was a continuation of those on this subject which appeared in the *American Journal of the Medical Sciences*, December, 1893, and the *Medical News*, April 14, 1894. It dealt with an unrecognized form of chronic nephritis with distinctive symptoms, in which albumin, even in traces, by the commonly employed tests, was persistently absent from the urine, and yet uremic symptoms were common. Although unable to present the result of a necropsy on a personally observed case of this sort, a portion of a kidney removed from one of them in life threw some light on the pathologic condition present.

Dr. H. A. Hare of Philadelphia then read a paper entitled "A Study Concerning the Cumulative Action of Digitalis." He stated that the experiments were intended to test the effects of digitalis on the thickening of the heart muscles. He took twelve young pigs of about the same weight and put six in one pen and six in another. They were fed in exactly the same way. To the first six he gave digitalis in increasing doses until they were taking 15 minims three times a day, the other pigs taking no medicine. The digitalis pigs grew very much larger, were very lively, tried to jump out of their pen and gained about twenty-nine pounds apiece, so that the country farmers noticed their increase in size, while the other pigs continued as before. The postmortem examination showed that the heart muscles were considerably thickened and strengthened. He defined the cumulative action of digitalis as a more or less sudden development of the regular action of the heart with gastric distress. The effect was cumulative, not the drug. He quoted many authorities to sustain his point. He does not believe that the cumulative effect is of an uncanny kind. There are no premonitory symptoms, but it occurs suddenly. He had addressed a large number of questions to physicians asking them if they had noticed this cumulative action, and what form of digitalis they had used and what were the doses. He thought that the action was due to the fact that the drug was more slowly eliminated than it was administered, and believed its effects were stored up, and his belief was that it should not be given more frequently than twice a day.

Dr. William Osler of Baltimore thought that this action was extremely rare and felt very badly to hear one of his few friends in the materia medica brought to trial. He gives it largely and with a free hand, and has never seen the cumulative action, but we all know the dangerous pulse with 40 at the wrist and 80 at the heart. In certain chronic valvular diseases of the heart he had given it for a long time, and thought that the cumulative action was so rare that it might be disregarded.

Dr. E. G. Janeway of New York asked if we attributed the sudden deaths in hospitals to the right cause. He had looked up the records of sudden death, and found in many cases that the patients had been taking digitalis and they had low heart beats and slow pulse beats. The sudden deaths he thought are due to the drug and not to the disease. He thinks that many sudden deaths in pneumonia are caused by digitalis, and he is sure he knows of deaths which have been attributed to Bright's disease.

Dr. Wilkins of Montreal said he had used it and had observed the cumulative action, and mentioned several cases.

Dr. J. C. Wilson of Philadelphia said that sudden death can come from other causes as well as digitalis; he had never seen the cumulative effect and had never given it in pneumonia as a routine measure. He does not give it in fever; it does no good and often does harm. It interferes with digestion. He gave 15 minims three times a day for three or four weeks and observed no effects. He always followed two rules in giving digitalis; one was he stopped it after a few weeks and then began again after a few weeks rest; he also gave it in moderate doses.

Dr. J. T. Whittaker of Cincinnati has seen cases of the cumulative effect, and he has stopped it on account of nausea and vomiting occasionally. In his city it was quite common to give it in the crisis of pneumonia.

Dr. Charles Carey of Buffalo has never seen any poisonous effects from it, and he mentioned several cases which had been taking doses continuing for longer periods with no bad effects.

Dr. A. McPhedran of Toronto asked if these effects were due to the retention of digitalis in the system, or to over-stimulation of the heart, and he felt very sure that in cases which were affected by the drug there was also a decreased secretion of urine, which would account for the bad effects.

Dr. H. A. Hare said in conclusion that Dr. Osler had proved just what he did not intend to prove; he wished to state clearly that it was the effect that was cumulative, and not the drug. He thought that the various opinions expressed at this meeting were due to the difficulty in obtaining a uniform preparation of digitalis, for he had examined a number of preparations and had found that the proportion of active principles, such as digitonin and digitoxin, varied greatly.

THURSDAY, MAY 6—THIRD DAY.

Dr. J. T. Edes of Jamaica Plains then read a paper entitled "The Relation of Neurasthenic Conditions to the General Nutrition," of which the following is an abstract: Gain in body weight and improvement in neurasthenic symptoms usually go together, but there are enough exceptions to the rule to show that the nervous nutrition is something more than a mere sample of the general. The more symptoms approach in character the "fixed idea" of the insane the less amenable are they to the beneficial effect of mere somatic therapeutics. The blood color (Fleischl) of a considerable number of neurasthenic patients corresponded quite closely with that of the employes in the same institution. It was not possible to establish any correspondence between the degrees of anemia and the intensity of nervous symptoms. Measurements of the excretion of uric acid afford no sufficient ground for supposing that neurasthenic symptoms depend in any way upon this substance. There may be such a thing as a chronic uric acid headache, but the ordinary continued neurasthenic headache is not of this character. Indican determinations have not been numerous enough to be decisive, but do not seem to indicate that the poison consists in this substance or in those which may be transformed into it. If neurasthenia is a toxic condition, the poison has not yet been satisfactorily identified.

Dr. James J. Putnam of Boston corroborated his statement and said the neurasthenic patients often looked pale and bloodless when they would have a normal amount of blood and hemoglobin. He thought that Haig's writings were attractive but they were devoid of that critical spirit which one would look for in dealing with such an important subject; there were loopholes for error in every step of his theory. Changes in metabolism are affected by the nervous system and normal and pathologic activities are immediately connected with changes in metabolism. When two subjects are so closely connected it is difficult to say which is the cause or which is the effect or if it is merely a coincidence.

Dr. Norman Bridge of Los Angeles, Cal., read a paper on "Reflex Neuroses of the Abdomen." His object was to set forth from a clinical standpoint a large number of those reflex neuroses or symptoms, some of which are frequently overlooked and some confusing in diagnosis. These reflexes are hard to understand. They give the patient great annoyance and cause suffering and some simulate grave diseases and continue for months and years. A common one is increased peristalsis of the intestines, causing diarrhea. This form is very frequent; it is the diarrhea of the colon and it is hard to understand why the attacks follow so closely each meal when it is probably from the previous meal. He said that emotion and excitement and even diffidence and fear would bring on this attack and these exciting causes were extra-abdominal. He referred to several cases in which surgeons were taken with these nervous attacks before performing an operation or clergymen were overcome with diffidence and were not able to fulfil their pastoral duties. This trouble was characterized by a form of gas in the intestines after a meal and there is also some indigestion and flatulence and escape of gas with borborygmi. There was often pain in the head especially in women, which was relieved by a cathartic. Mental excitement will also cause these attacks. Another reflex is a slight sciatic pain on both sides which was relieved after a passage. Another reflex which is commonly called "growing pains" is often caused by an overcrowded condition of the stomach and bowels; a free evacuation will stop it. Prurigo of the legs is another reflex from the same cause and is cured in the same way. He then referred to certain rashes of the skin or urticaria from eating crabs, fish, strawberries, etc. Some attacks, such as asthma, are also reflex in character and are caused by a muscular spasm of the lung. He said that some cases of insomnia were successfully treated by an enema at bedtime.

Dr. William H. Welch of Baltimore referred to urticaria as a reflex phenomenon and spoke of Dr. Gilchrist's work in his laboratory. Dr. Gilchrist has studied the class of cases in which there was a redness of the skin after a slight scratch; he cut out some pieces of skin and found on a microscopic examination that five minutes after the irritation there was a certain amount of serum and emigrated leucocytes present and in fifteen minutes there was a large collection of leucocytes. There must be something outside that attracts the leucocytes and it is not clear what it is. The expression "reflex phenomenon" does not explain it altogether but there must be something in this chemotactic action.

Dr. Charles G. Stockton of Buffalo was interested in two points mentioned. One was post-prandial diarrhea which

occurred with sufficient frequency and in a sufficiently regular physiologic course to deserve a name. There was not only hurried evacuation of the intestinal canal after a meal, but later there is gastric anacidity; that is the stomach seems to lose all of its acidity. He has recorded a number of cases in which there was also this reflex, a striking error of refraction of the eye. He does not say that this reflex depends on the the ocular error but he thinks the two must be connected. Another point is painful neuroses in the abdomen and parts below which are caused by a descent of abdominal organs, such as a misplaced kidney. He had seen cures result from fixation of the kidney.

Dr. Francis H. Williams of Boston read a paper on the "Roentgen Rays in Thoracic Diseases." He first spoke of the general principles involved in this X-ray apparatus and described its physical, chemic and physiologic properties. He had found the apparatus especially useful in detecting disease of the lung and he had examined about four hundred cases of lung trouble and had never had any harmful results from the X-rays. He had the patient brought in on a stretcher from the ward and laid upon a table and with the Crooke's tube below and the fluoroscope above he carefully studied the condition of the lungs and heart. He referred to the different powers of resistance of air, water or other media and said that air was more permeable than water. In order to obtain any results from these examinations one must be familiar with the use of the fluoroscope and be acquainted with the appearance of the internal organs in a healthy condition. He showed some beautiful radiographs, clearly indicating some lesions in the lungs and changes in the heart. He had examined principally cases of pneumonia and tuberculosis. He had watched over forty cases of pneumonia and in some the lungs had been normal in appearance for months after an apparent recovery from pneumonia. He showed also carefully the pulsations of the heart and observed that the movement of the heart in beating was more marked at the left side on the base than at the apex.

Dr. R. H. Fitz of Boston then showed some beautiful radiographs of disease of the heart and aneurysm.

Dr. Osborne of the New Haven Medical School reported an acromegaly. A man had come to the New Haven Hospital with an edema of the lower extremities; he grew better and went home. Later he returned and grew rapidly worse and died. He was a man 47 years old and had the disease twenty-three years. He first noticed a ringing in the ears and then there was a gradual hypertrophy of the fingers, toes and of various bones throughout the body. Dr. Osborne exhibited photographs of various parts of the body and of the man as a whole and of the skeleton. He also exhibited some of the bones which showed the changes of the disease. He found that the heart weighed two pounds and nine ounces, which is probably the heaviest heart on record. The thyroid gland was much enlarged and in nineteen cases which he had collected of this disease he found large thyroid glands, and so he thinks that myxedema is closely connected with acromegaly. At the conclusion of his paper the thanks of the Association were extended to him for the exhibition of this case.

Dr. John J. Abel of Baltimore then read a paper on "The Chemical Properties of the Blood-Pressure Raising Constituent of the Suprarenal Capsule." He said that the suprarenal capsule was an organ of vital importance which furnished the blood and vascular system a muscular stimulant. He quoted many authors showing how this gland had been studied and stated that while he had obtained a powder which he exhibited he had not been able to isolate the active principles of the fluid and we do not know exactly what it is.

Dr. William Osler of Baltimore asked if he had examined the commercial products of the market to see if this blood-raising property was present in some of them. He had had several cases of Addison's disease and had had no good effects from remedies so far offered.

Dr. Abel replied that he had not looked into the subject from this point of view but he had no doubt that these commercial products did contain some such substance, as they were very simply made, by drying the gland and pulverizing it.

Dr. Simon Flexner read a paper "On the Occurrence of the Fat splitting Ferment in Peritoneal Fat Necroses." Upon the etiology of peritoneal fat necrosis much light has recently been shed, partly through the findings in cases occurring in human beings and partly through animal experimentation. A study of the cases in the literature would make it appear that the occurrence of fat necrosis was not always due to the same cause. Although infection seems in certain cases to play a part, it is probable that it is not by any means the most important factor. The view has gained ground that the disseminated forms of necrosis met with in the peritoneal cavity, as well as the more circumscribed lesions in the pancreas itself, may result from a perversion of the pancreatic secretion. Again, since it has been shown that trypsin, when injected into the peritoneal cavity, does not set up this condition, the suggestion that the fat-splitting constituent of the secretion, steapsin, might possibly prove to be the chief cause, has been ventured. In the literature no record occurs of any attempt to demonstrate the presence of this body in the areas of necrosis, and it is possible that investigators were deterred by the belief in its extreme sensitiveness. A suitable human case having presented itself, I undertook to prove the presence of this body in the fat necrosis and its absence from the normal fat. A satisfactory demonstration of this point having been arrived at, I next instituted a series of experiments in order to study more particularly the conditions under which the necroses make their appearance and the length of time the ferment is demonstrable in them. He drew the following conclusions: 1. In peritoneal fat necroses the fat is demonstrable. 2. It is present in the early stages and may disappear later. 3. The ferment is the direct cause, but this can not be proved. 4. The escape of pancreatic secretions is the origin of the necrosis.

Dr. William H. Welch of Baltimore said that several years ago he had brought before the Association a case in which the organisms were present, and it was the first demonstration of the colon bacillus. At that time he made the remark that the organisms had nothing to do with necrosis, and since that this has proved to be true. It is very satisfactory to have these observations so fully confirmed by Dr. Flexner's work.

Dr. A. C. Abbott of Philadelphia then read a paper on "Further Studies upon the Pathogenic Spirilla of the Schuylkill River at Philadelphia," which was the conjoint work of himself and Dr. D. H. Bergey. This was a continuation of the work begun about a year ago, in which he attempted to study some of the organisms of the Schuylkill river. He found that some spirilla were present in the Schuylkill all the year around, also in the Delaware. He had not examined the water of the other rivers, but felt sure that this organism was due to some sewage contamination. He had found 110 varieties of organisms in this water, and he had attempted to classify them, but without any satisfactory results. Some pathogenic organisms were so weak as to be almost non-pathogenic, and some non-pathogenic organisms answered in every other way to the best of the pathogenic tests.

Surgeon General George M. Sternberg, U. S. A., said that these observations at this time, when there was no cholera in the country, were especially valuable. If they had been found at the time of cholera, they would have been thought to be cholera spirilla.

The next papers were "The Effects of Various Metals and Metallic Salts on the Growth of Certain Bacteria," a continuation of a similar paper read before the Association of American Physicians May 30, 1894, by Drs. B. Meade Bolton and W. G. Brown of Columbia, Mo. The zones that are formed by the bacteria around bits of metal laid on plate cultures are due to the fact that the solution of the metal tends to concentrate in one or more zones. Where the concentrated zone of the metal is formed the bacteria fail to grow. Metallic salts act in the same manner as the metals. The more soluble the salt, the more pronounced the action. In the zones where the growth is more pronounced than on other parts of the plate the colonies are usually fewer, but larger in size.

"On the Appearance of Certain Amebic-like Bodies in the Blood of Vaccinated Monkeys (rhœsus) and Children and in the Blood of Variola. An Experimental Study," by Dr. Walter Reed, Washington, D. C. Following the introduction of Koch's improved methods, the search for the specific causative agent of vaccinia has been made especially along the line of bacteriologic research. Notwithstanding many claims of positive results, these have in the end proven groundless. During the past ten years, and more especially during the last half decade, the attention of investigators has been turned toward the possibility of the animal nature of the parasite. Van der Loeff, L. Pfeiffer, Rieck, and more recently Ogata, have described minute bodies always present in vaccine and variolous lymph, which they assign to the sporozoa. The first attempt to cultivate the supposed parasite of vaccine lymph was made in 1892 by Guarnieri, who used the cornea of guinea pigs and rabbits for this purpose. After forty-eight hours, epithelial scrapings from the inoculated cornea, suspended in a hanging drop of aqueous humor, showed little shining, slowly ameboid bodies, often with irregular margins, within the epithelial cells. Guarnieri considers these bodies to belong to protozoa, and calls the parasite citoryctes vaccinæ. These observations have been confirmed by L. Pfeiffer, von Sicherer, Clark and E. Pfeiffer. Ferroni and Masssari have failed to confirm Guarnieri's observations. In 1894, L. Pfeiffer reported the finding in the blood of vaccinated children (seventh day), and

calves (fourth day), and in the blood of variola, ameboid cells (provided with pseudopodia) one-half the size (in the calf), of a red cell, and (in the child), one-fourth the size of a red cell. These bodies are not intracellular, but swim free in the blood. They have a nucleus, and sometimes flagella—which can be stained—appear during the stage of fever and disappear with this. My own experiments confirm in some respects Pfeiffer's observations. Bodies of a corresponding size, and ameboid in character, appear in the blood of vaccinated monkeys about the seventh and disappear about the twelfth day. The same bodies are found in the blood of vaccinated negro children, but were much more difficult to find in the blood of white children, and in several cases of the latter could not be discovered. Bodies of a like nature, though differing somewhat, were found in the blood of three smallpox patients during the height of fever, disappearing later.

Dr. F. H. Williams of Boston, read a paper on "An Epidemic of Cerebro spinal Meningitis caused by Diplococcus Intracellularis Meningitidis" (Jaeger). This was a study of a slight epidemic of this disease in Boston City Hospital. He had attempted treatment by tapping the spinal sac at the second lumbar vertebra and the fluid which he had obtained had been examined by Dr. Councilman. He would report.

Dr. W. T. Councilman of Boston said that he had studied the fluid from these cases and had found the organisms which Weichselbaum had first described in Vienna. Some of these cases came from the extension of the disease from an acute otitis media. He had found staphylococci, diplococci and streptococci. He had examined seventy-seven cases in which the organisms had been found and he had found it in nine out of twenty cases in the City Hospital and in sixteen out of thirty in the Children's Hospital. He had also examined the other organisms; he had found the spleen enlarged in some cases; he had also examined the organisms in the nasal sinuses and in one case in an abscess of the tonsil. The organisms grow best on blood serum.

Dr. Guitéras had seen two cases which he will record later. One case was a nurse at the hospital and one was a newborn child. The organism was found in the blood and there were no other lesions.

Dr. Williams said in regard to the lumbar puncture that it was very valuable in the diagnosis, but the relief was only temporary and about 70 per cent. of the cases died. The fluid was withdrawn gradually.

Dr. W. T. Councilman said that the exudation in quite a number of cases had a tendency to extend along the course of the cranial nerve and in one case it was visible to the naked eye along the optic nerve extending almost to the eye. In some cases that recovered there was loss of both sight and hearing, and the eye affection was found to be due to an infection from the meninges.

Dr. F. C. Shattuck of Boston said he had seen about fifteen cases and his experience had been that not a child died and not an adult recovered.

Dr. A. A. Smith of New York then reported a case of "Levant Fever." He said this disease has a great many names but this was the one most generally used at the east end of the Mediterranean Sea, where the disease was prevalent. His patient was a woman who lived at Beyrout and her husband was a physician and had seen many cases. She was taken sick on July 4, 1896 and he saw her first in January, 1897. He said the fever would continue for three or four weeks and then there was freedom from fever, and then there was a relapse which was more severe than the previous attack and so on with intervals of freedom; the temperature sometimes being normal, but the fever still continuing in this case. It was resistant to quinin. He exhibited some beautiful drawings of the blood and of the organisms which he said caused this disease and it was characterized by an obscure pigment. He said the parasite was much like Laveran's organism but was not the same thing. In reply to Dr. Shattuck, who asked if he had used arsenic, he said he had used everything except phenic acid, and in reply to Dr. Dock, who asked if there were many organisms in proportion to the blood, he said there were a few now but there had been more formerly.

Dr. Dock said that one would think this was a form of malarial parasite as described by some of the Italian writers. The absence in pigmentation and segmentation would do away with the resemblance to the malarial parasite. We do find it in some fever bodies which looked like the malarial parasite and when Laveran published his observations some German writers said that they could find these bodies in other diseases. They looked too much like the protozoa and the appearance of the colored drawings made him very skeptical. We should be slow in believing that the parasite of Levant fever has been described.

Dr. A. Jacobi then read a paper on "A Case of Adenoma of the Liver with Complications."

Dr. B. K. Rachford of Cincinnati then read a paper on "Lithemia," in which he proposed the following prescription: Sodium sulphate 120 grs. wet salts; sodium phosphate 30 grs. wet salts; sodium salicylate from oil wintergreen 10 grs.; tr. nux vomica gtt. 3; aqua q. s. ℥ iv. CO_2 q. s. Take before breakfast. Sodium sulphate 30 grs. dry salt; sodium salicylate from oil wintergreen, 10 grs.; magnesia sulphate, 50 grs. wet salt; benz. lithia, 5 grs.; tr. nux vom. gtt. 3; aqua q. s. ℥ iv. CO_2 q. s. Take before breakfast.

Dr. James T. Whittaker of Cincinnati then spoke of the "Earliest Possible Recognition of Tuberculosis." He said it was very important to recognize the disease before the first physical signs appeared. He then reviewed the history of the disease, the prominent symptoms and the treatment which had been used heretofore. He said the use of tuberculin was not sufficiently appreciated and in fact many persons objected to it because they said that a reaction was obtained when tuberculosis was not present. Klemperer said that we had no right to diagnose tuberculosis just because we found bacilli in the body, but this is a poor argument. The use of tuberculin will show the presence of bacilli in the body. In giving this he first administers 5 milligrams, then 10, and as much as 2 centigrams. Virchow's objection was that tuberculin aroused latent tuberculosis and caused the bacilli to spread over the whole body and to disseminate the disease, and it was said to appear more frequently in cases treated with tuberculin. We must not use it in too large doses or too late in the course of the disease. There is a prejudice against it, but it is a valuable remedy. Trudeau, Denison and Klebs all use it in a modified form, and he had had success with it. He had used it in 1,000 cases and had never seen a bad result from its use and regarded it as a safe means of diagnosis. He reported quite a number of cases and said that Klebs, Jr., stated that he got a reaction in cases of chlorosis.

Dr. Shattuck said that it had been used in the City Hospital and he had seen no harm come from it. One difficulty was that persons reacted in which there was no evidence of tuberculosis and in whom no reason for reaction could be found. He knew a patient who had a tumor in the epigastrium and reacted typically; later she died; the autopsy showed a cancer of the stomach and other organs and also at the top of the right lung was a small cheesy nodule which had healed up and had given no signs or symptoms of the disease. If tuberculin is regularly used the number of cases would increase and also the number of recoveries from the disease.

Dr. A. L. Mason of Boston had used it to a considerable extent in the Boston City Hospital and had found it especially valuable in determining whether to operate or not in cases of doubtful tuberculous peritonitis in which a laparotomy was indicated.

Dr. E. A. de Schweinitz of Washington read a paper on "Some Products of the Tuberculosis Bacillus and the Treatment of Experimental Tuberculosis by Antitoxic Serum." A description was first given of two of the products obtained from tuberculosis cultures, one of these a crystallizable acid and its probable bearing upon the progress of the disease. A brief sketch came next of some experiments showing the relationship of the attenuated tuberculosis bacillus to immunity followed by a description of some methods for the production of antitoxic serum and its experimental application. He had tried also injections on the live culture but had found that the serum was the best. Horses are the most favorable animals to use. At no time has his remedy produced toxic effects, as it has been very carefully made.

Dr. D. D. Stewart of Philadelphia read a paper on "The Occurrence of Primary Renal Tuberculosis." The diagnosis, frequency of occurrence, and source of infection, of tuberculosis of the kidney as a primary affection, was dicussed, and an unreported case of Dr. Stewart's, in which a limited primary tuberculosis of the pelvis of the left kidney occurred, in a case of chronic nephritis.

Dr. H. A. Hare of Philadelphia read a paper on "A Further Study of some of the Untoward Effects of the Bromids." He referred to Weir Mitchell's paper read about a year ago before the Association and said that at that time he thought that Mitchell's work was original; but since then had found that the subject was an old story to all medical superintendents of insane asylums. He addressed a number of letters to physicians in charge of insane asylums asking if they had noticed bad effects from the use of the bromids and to give their experience. He received a number of replies in which many said that acute maniacal delirium was quite common after the use of the bromids, especially in cases of epilepsy, and these nerve storms are often accompanied by homicidal and suicidal mania.

He thought that the sodium salts was better than potassium salts and said that the poisonous effects are often due to the potassium and not to the bromin.

Dr. H. C. Wood of Philadelphia thought that much of the belief of these statements of medical superintendents of insane asylums rested on insufficient basis. For instance a man has epilepsy and bromid is given him. The bromid does not cause the mania but throws the attack into another channel. He preferred ammonium bromid and said that a quack in New York had succeeded in relieving a case which Dr. Weir Mitchell had failed to benefit and he found in analyzing the medicine, that this quack used the ammonium bromid.

Dr. I. E. Atkinson of Baltimore thought that the bromid of potassium was too much used, that many of these bad attacks would have been observed before and would have occurred more frequently. He could hardly believe that this was the cause of what Dr. Hare says it was. It must be in part an idiosyncrasy.

Dr. Hare said in conclusion that almost every asylum physician had asked him to impress upon the general profession the dangers of giving too much bromid and said that when a case entered their asylum the first thing to be done was to rid the patient of the bromid.

(*To be continued.*)

Kentucky State Medical Society.

Abstract of the Proceedings of the Forty-second Annual Meeting, held at Owensboro, May 5, 6 and 7, 1897.

(*Concluded from page 943.*)

SECOND DAY—AFTERNOON SESSION.

Dr. W. L. RODMAN of Louisville contributed an excellent paper on lithotomy for stone in the bladder.

Dr. JAMES B. BUDLITT of Louisville made some remarks on hospital beds and demonstrated a new method.

Dr. A. M. CARTLEDGE of Louisville reported a case of Cæsarean section.

Dr. R. B. GILBERT of Louisville read a paper on

SUMMER DIARRHEA IN INFANTS.

Under the name of summer diarrhea, he discussed that form of diarrhea which is so prevalent in hot weather, and which carries off so many infants every summer. A revision of the nomenclature of enteric diseases of infancy was needed at this time, especially on account of our constantly increasing knowledge of the etiology of these diseases. The nomenclature should be simplified in order that physicians in different parts of the country would, by using identical names, be the better able to aid one another in their investigations.

The typical summer diarrhea begins with the first spell of hot weather, when the temperature rises to 70 degrees daily for a week or ten days consecutively. The summer season, in a general way, is a prime factor in the causation of this annually recurring diarrheal epidemic. The solar temperature does not of itself cause the diarrhea, as is evident from the fact that hot weather prevails in the rural districts as well as in the cities, and yet the disease is very rare in the country. Doubtless the poison generated by the growth of bacteria in milk is the direct cause of a majority of the cases of diarrhea in infants. It is not surprising therefore that Dr. Starr has given the disease the significant name of "sub acute milk infection." It may be briefly stated that the annually recurring epidemics of summer diarrhea are mainly due to the action of poisons generated by the growth and multiplication of bacteria which are taken in by the air and food, chiefly milk. Acid fruits and vegetables, and milk containing an excess of casein fed to infants, will occasionally cause diarrhea. The symptoms of this form of diarrhea are easily recognized. The prognosis will be influenced by the surroundings of the patient and family history.

From what we know of the causation of this disease, proper preventive treatment would save many lives. Fresh air and wholesome food are essential as preventive measures, and indispensable as curative measures. The question of infant feeding is perplexing. An infant sick of an inflammatory diarrhea should, for the time being, be taken off milk diet entirely. The intestinal bacterial flora multiply and thrive best in milk. If milk be excluded from the food the character of the germs rapidly and radically change. Milk should be excluded for, at least, three days, in which time the diet should consist of fresh egg albumin with a small portion of common salt. The white of a fresh egg beaten up with crushed ice and "a pinch of salt" is most accepable to the stomach and is sufficient nourishment. Pure sterilized water may be given freely. Soups, meat broths and starchy mixtures should be rigidly excluded. An old fashioned, and yet excellent and palatable, food is fat country bacon. Bacon broiled half done will be eaten by an emaciated infant with a hearty relish, and the author has seen it work wonderful changes both as a diet and as a remedy in protracted summer diarrhea.

SECOND DAY—AFTERNOON SESSION.

Dr. W. R. BLUE of Louisville read a paper entitled

SPECIFIC URETHRITIS, ITS POSSIBILITIES AND PREVENTION.

The author said that this disease was first described by the Chinese emperor, Hoang-Ty, 2637 B. C., and from that time until the present this misnamed disease, its complications and sequlæ, had been written and talked about more than any affection known to the profession. The researches of such men as Tait, Martin and Olshausen had confirmed the correctness of Noeggerath's views, who considered specific urethritis incurable. Early in life the essayist heard an eminent surgeon, one of his teachers, say that if he were doomed to have a venereal disease, he would rather have syphilis than specific urethritis. The speaker marveled and disbelieved, but said that he now knows that if his teacher included women in his thoughts of the subject, he spoke truly. Syphilis was a relatively harmless disease. It might cause discomfort and distress, and even pain, but he doubts if it ever kills women.

The author quoted from the contributions to the literature of specific urethritis by Lawson Tait, Olshausen, Martin, Neisser, Finger, Lydston and several others.

Dr. FRANK C. WILSON of Louisville considered

SERUM THERAPY IN TUBERCULOSIS.

The author's experience with the use of antitubercular serum and the favorable reports of a large number of physicians who have been using it, leads him to the following conclusions:

1. That we have in antitubercular serum a remedy potent for good when used in suitable cases and with proper antiseptic precautions in its administration.

2. In the earlier manifestations of tubercular infection the results are uniformly good.

3. Even in the more advanced cases, where the microscope fails to disclose the presence of other microörganisms, we may expect marked improvement.

4. Even in cases of mixed infection we may note the disappearance of the tubercle bacilli, although the other microorganisms may continue to multiply unless combatted by appropriate means.

5. In glandular and lymphatic tuberculosis the reduction in size of the enlarged glands may be noticed, but intestinal secondary infection is very apt to occur, and this is influenced very little by the serum.

6. The use of anti-tubercular serum must not preclude other and valuable methods of treatment, and the use of other forms of antitoxins appropriate to the individual cases.

Dr. FRANK BOYD of Paducah read a paper on direct illumination of the pleural cavity for the location of foreign bodies, and reported an interesting case.

Dr. T. C. EVANS of Louisville contributed a paper on

ACUTE SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

Before speaking of acute inflammation of the middle ear, he briefly mentioned a few points in regard to its anatomy. Acute inflammations of the tympanic cavity are usually divided into acute catarrhal otitis media, and acute suppurative otitis media; yet the distinction between the two is often so small as to make the differential diagnosis difficult or even impossible. In acute catarrhal otitis media there is hyperemia and swelling of the mucous membrane lining the tympanic cavity and covering the ossicles. This is followed in a certain proportion of cases by an exudation of serum and mucus into the middle ear, and is then spoken of as an exudative catarrh. The disease is common to all ages, but it is much more frequent in childhood. It is caused by diseased conditions of the mucous membranes of the nose, naso pharynx and pharynx. Adenoid growths probably head the list, and then follow the exanthematous diseases, as scarlet fever, measles and diphtheria.

The indications are to relieve pain, to remove the exudation by paracentesis or by absorption, to restore the proper tension of the membrana tympani and ossicular chain, to prevent, if possible, a recurrence of the trouble by the removal of the cause. Unless pain is unusually great, it can be controlled by the application of heat, either irrigation with hot water, or the application of hot water bags or hot salt bags. Poultices are unsatisfactory, uncleanly, and possess no virtue aside from the heat. Every precaution should be taken both before and after the paracentesis to prevent infection, otherwise we will have a purulent instead of a catarrhal otitis media.

The proper tension of the membrane is restored by inflation through the Eustachian tube, preferably by the Politzer method.

The inflation relieves the feeling of discomfort, if not the actual pain, increasing the hearing, lessens the intra-tympanic congestion, as well as the tinnitus. Inflation should be practiced every day in the beginning of the attack, as the trouble begins to subside, two or three times a week until recovery is complete. As the acute otitis subsides, the attention of the physician should be directed to the condition of the nares, naso-pharynx and pharynx, and any obstruction to free nasal respiration should be removed.

The essayist then dwelt upon the surgical treatment of suppurative inflammation of the middle ear, saying that the location, extent and direction of the incision had not received the attention its importance demands. Too much had been left to luck, too much to a wild stab in the dark, without reference to either anatomy or physiology. Such reckless incisions made without regard to location, extent or direction, not only failed to relieve pain or afford drainage, but might permanently impair the integrity of the ear by fracture of the ossicular chain.

Dr. J. A. STUCKY of Lexington followed with a paper on

CHRONIC SUPPURATION OF THE MIDDLE EAR,

in which he said that this disease had long been a "thorn in the flesh" of both the general practitioner and specialist, and the old idea still prevailed among some that "a discharge from the ear should not be interfered with, that nature will effect a cure," etc. Acute suppurative otitis media, if not carefully and intelligently treated, as a rule results in chronic suppuration, and the larger per cent. of these cases are undoubtedly the result of lack of proper attention to the first "earache and abscess in the ear" in childhood.

The author believes the causes of chronic otitis media to be: 1, retention of pus; 2, chronic disease of the naso-pharynx; and infection primarily takes place through the Eustachian tube. He thinks the middle ear is rarely infected through the external auditory canal, except as a result of traumatism or extension of an external otitis to the drumhead.

Why we should tolerate the presence of dead bone in the tympanic cavity, he could not understand, and from the results obtained in thirty-six cases in which he had removed one or both ossicles and curetted the attic, he is convinced that ossiculotomy, if caries exists, is not only the most conservative, but the most rational treatment for the majority of cases of chronic suppuration of the middle ear. The object to be attained is the thorough removal of necrotic and carious matter, and to obtain perfect drainage, and I believe this can be successfully done through the auditory canal. Ossiculotomy, when thoroughly done, affords efficient drainage, and renders thorough cleansing easy. As a result, material improvement is noted in the hearing by exposing the stapes to sound vibrations, unless the latter is immovable on account of adhesions. In every case we should be prepared to do the Stache-Swartze operation, if we find that necrosis has extended into the mastoid cells, or if on account of a narrow meatus and canal we find it impossible to obtain thorough and complete drainage and render cleansing and topical applications easy. The operation is done under general anesthesia, and the patient is up and out attending to his duties, usually in from two to four days.

The after-treatment consists of cleansing and facilitation of drainage by use of narrow strips of gauze introduced well into the cavity. This is to be kept up until the parts are thoroughly healed. The results obtained in the thirty-six cases operated upon by the essayist were: Cessation of the discharge; relief of fulness, dizziness and general uneasiness, especially in the diseased ear; slight to marked improvement in the hearing, and improvement in general health.

THE INTRACRANIAL COMPLICATIONS OF SUPPURATIVE DISEASES OF THE MIDDLE EAR.

This was the title of a paper by Dr. J. MORRISON RAY of Louisville, which was read by Dr. Wm. Bailey in the absence of the author. Intracranial complications of ear diseases were divided into: 1, those affecting the membranes surrounding the brain, as meningitis, or subdural abscess; 2, those affecting the substance of the brain, either the temporal lobe of the cerebrum or the cerebellum, producing pus accumulation; 3, those in which pyemic symptoms result from the pyogenic process perforating the walls of the lateral sinus in the sigmoid groove.

Abscess of the brain tissue resulting from the ear is generally found to involve the temporal lobe of the cerebrum by extension from the middle ear through the roof of the attic or antrum, opening directly into the middle cranial fossa; or the cerebellum by necrosis occurring through the back wall of the mastoid, or through the internal auditory meatus, into the posterior cranial fossa. The frequency with which the abscess is situated in the cerebrum indicates the proneness for the suppuration to extend through the tympanic roof. Barr, in 76 cases found abscess 55 times in the temporal lobe, 13 times in the cerebellum. Keorner, of 100 cases, found 62 in the middle cerebral lobe, 32 in the cerebellum, and in 6 cases both the temporal lobe and the cerebellum were involved. The investigations of Gowers and others further show that nearly three-fourths of all brain abscesses are of otic origin.

In considering an operation, the primary seat of the suppurative process should not be overlooked; therefore the first step should always be to open the mastoid antrum and cells, and thence the middle ear, getting directly at the source of pus formation. If a sinus is found leading through the root of the antrum or attic, this may be enlarged and the brain cavity opened, or an opening can be made with the trephine. This is best made one and one-half inches above and an inch behind the external canal. In this way we are able to explore the temporal lobe, the most frequent seat of abscess. If, after entering the mastoid, an opening is found leading toward the sigmoid fossa, it is better to enlarge this and lay bare the lateral sinus, as it lies in the sigmoid depression. If evidences of pus surrounding it are apparent, and if pulsation of the blood column is absent, the sinus should be opened and the thrombus thoroughly removed.

Pritchard advises the following in all cases: 1, thoroughly open the antrum and explore the mastoid cells; 2, failing to find sufficient evidence to account for the symptoms, the wound in the skull should be enlarged backward, expose the middle and posterior fossæ above and below the lateral sinus, which should be explored by means of a hypodermic syringe, and subdural abscess looked for; 3, if a clot is found in the sinus, the internal jugular should be tied, the sinus opened and thoroughly cleared of its contents; 4, if suspicion of cerebral or cerebellar abscess exists, exploratory puncture should be made, and, if pus is found, it should be evacuated.

Dr. S. LAMBERT of Owensboro read a paper entitled

ENDOCARDITIS, A SECONDARY CAUSE IN THE PRODUCTION OF VALVULAR DISEASES OF THE HEART.

Endocarditis is always a secondary disease, the result of the action of some infectious process, for it is now an established fact that it results from the colonization of microörganisms of infectious diseases upon or beneath its surface. To have an endocarditis, we must have a preceding diseased condition or cause. This cause may be the organisms themselves or their toxins. It is the character and location of the morbid process that the author wishes to impress more than the primary or secondary effect. Endocarditis on special places of the valves is often encountered, but the author doubts if ever a general endocarditis occurs by reason of traumatism. Special diseases more often produce it than others, and what is more peculiar, the mitral and aortic valves are almost exclusively the ones to suffer. Furthermore, it affects the mitral valve on its auricular side and the aortic valve on the ventricular side.

Dr. JAMES T. RINEHART of Springfield followed with a paper entitled

TREATMENT OF PUERPERAL INFECTION

and reported cases. He first considered prevention as the most important part of the treatment. Secondly, he dwelt upon the curative treatment of puerperal infection. The preventive treatment, said the author, sums itself up in one word, asepsis, no matter how it may be attained. The physician should never undertake a case of labor without having himself free from all germs of infection. If he has been attending such a disease as erysipelas, he should thoroughly disinfect himself and make an entire change of clothing.

In closing, the author referred to the administration of hyposulphite of sodium. He believes he has received benefit from it in two and a half grain doses in these cases, repeated at intervals of three to four hours. It seems to act as a blood antiseptic, and as an eliminative as well. It is used by physicians in the South to prevent malarial intoxication. In like manner, the essayist believes it exerts an antiseptic action against blood infection in cases of puerperal sepsis. He believes it is especially useful in phlegmasia alba dolens.

Dr. LEON L. SOLOMON of Louisville read a paper on "Proprietary Medicines—Evils of the Profession."

Dr. J. T. DUNN of Louisville read a paper on "X Rays in Surgery," and reported several interesting cases. He also exhibited several skiagraphs of cases showing the location of foreign bodies imbedded in the tissues. These cases were operated upon and the foreign bodies removed with excellent results.

The following officers were elected for the ensuing year:
President—Dr. Joseph M. Mathews, Louisville.
First Vice-president—Dr. W. W. Richmond, Clinton.
Second Vice-president—Dr. B. M. Smock, Oakland.

Treasurer—Dr. J. B. Kinnard, Lancaster.
Permanent Secretary—Dr. Steele Bailey, Stanford.
Librarian—Dr. Frank Boyd, Paducah.

After resolutions of thanks to the president, secretary and treasurer for their efficient services had been adopted, the Association adjourned to meet in Maysville in May, 1898.

Medical and Chirurgical Faculty of the State of Maryland.

Ninety-ninth Annual Session, held April 27 to 30, 1897.

FIRST DAY—DAY SESSION, 12 M.

Dr. Osler delivered the president's address entitled, "The Functions of the State Faculty." This Society, which was incorporated in 1798 and called a Faculty, has only one other counterpart in the English-speaking land, that is the Faculty of Physicians and Surgeons at Glasgow. The Medical and Chirurgical Faculty was formerly a licensing body; the Glasgow Society is also a licensing body, but the word "faculty" at the present day is more exclusively applied to indicate men engaged in teaching. Physicians have less appreciation of the value of the organizations than the members of other bodies, and in large cities weakness results from the breaking up of cliques and coteries, the interest of which takes precedence over others of wider and more politic character. Jealousies and misunderstandings are not unknown and there is a every-man-for-himself influence against which this Faculty is protesting. No class of men needs friction so much as physicians; no class gets less, as the daily round of the busy practitioner tends to develop egoism of the most intense kind, to which there is no antidote. A few set-backs are forgotten, all mistakes are often buried and ten years of successful work tends to make a man too dogmatic and intolerant of correction and abominably self-centered. To this mental attitude a medical society is the best corrective and a man misses a great part of his education who does not get knocked about a bit by his colleagues in discussion.

The Faculty has given us today a program which is varied and interesting and which should arouse in you a desire to participate in the discussion. These are days of unification and consolidation and the question has been raised by several members whether the usefulness of the Faculty could not be enormously increased by uniting as sections of the Faculty of various medical societies at present in existence in this city. It would add strength and dignity, and it would make the State Faculty much like the New York Academy of Medicine, or the Philadelphia College of Physicians. The county members could often take part in this extended meeting and in that way the relationship with the Faculty would be closer than it is at present. Unlike many other State organizations this Faculty has an important library, which was founded early in 1830. These books are valuable. A physician who does not use books and journals, who does not need a library, who does not read one or two of the best weeklies or monthlies soon sinks to the level of the cross-counter dispenser. To maintain a library costs money and the members in many ways can help by bringing in new members and by joining the Book and Journal Club of the Faculty. Charles Frick was a benefactor to the library, the men who honored his name have been most liberal in contributing. The Faculty will soon celebrate its centennial and in two years, when that event takes place, not only should the small debt for our building be wiped out, but a large amount should be subscribed from physicians and from friends of physicians to enable us to put up a larger building and strengthen our society. Many of us earn a modest competence and can afford to contribute in a way to the State Society's support.

Dr. E. N. Brush, Superintendent of Sheppard Asylum, then made some remarks on the "Condition of the Dependent Insane in Maryland and Suggestions Concerning their Better Care." He said that the insane were the children of the State and as such should be taken care of by the State. The number of the insane in Maryland is hard to say, but probably about two thousand. A great many of them are in jails and almshouses and are under such mechanical restraint, but if in a hospital it would be considered a reflection on the institution. The State lunacy laws are bad. No sane person should be sent to a lunatic ward. Commitments should be made under very strong and plain laws and the State should exercise full supervision over the dependent insane. The proportion of attendants to the insane was entirely too small.

Dr. Henry M. Hurd of the Johns Hopkins Hospital made some remarks on the "State Supervision of the Care of the Insane and the Inspection and Regulation of Institutions." The Lunacy Commission is suffering from defective laws; the State should see that care is taken of their insane for the protection of society at large as well as for the persons insane. A large sum of money has been appropriated for the insane and it is due the tax-payers to see that it is properly expended and during a person's insanity his property should be well managed. If the State undertakes to care for the insane the work should be done well. The executive officer of the Lunacy Commission should give his whole time to his work and carefully examine all institutions and almshouses. Then there are no reliable statistics. The Commission report says the insane are clean and comfortable, but nothing is said about the treatment. They require the best medical attention and professional nursing. The nursing of the insane in Bay View Asylum is commended by the Commission, yet every one knows that there is a large number of insane and few attendants and the nursing is very faulty. No State is so lacking in its laws relative to the care of the insane as Maryland. At least none of the Northern States. The almshouse is no place to keep insane persons. The physicians to these almshouses are usually appointed by politicians and take very little interest in their work. As these cases are often curable there should be something more done than simply giving them food and clothing and letting them roam around.

Dr. William Lee, Secretary of the Lunacy Board, then read a paper on the "History of the Steps taken for the Amelioration of the Condition of the Insane by the Lunacy Commission since its Organization." He referred to the amount of time which was given to the discussion of this subject before the Faculty four years ago, and then gave a brief history of what had been done. The Lunacy Commission was organized in June, 1886, and immediately sent out to every public institution for the insane in Maryland, including almshouses, notifying them of the formation of this Commission and the proposed visit to each institution in the State. In October of the same year the first quarterly meeting was held and the reports read showing what was demanded of county almshouses for the care of the insane. Blank forms were furnished each almshouse to be used in making reports of the mental insane or idiotic. Since this time institutions where insane were kept have been changed, new asylums having been erected and altogether great improvements have been made. In the second year a resolution was passed that hereafter all plans for new asylums should be submitted to the Lunacy Commission. Feeling that the institutions of the State were not large enough to accommodate a great number of the insane, the Commission obtained more money and made an addition to the Maryland Hospital for the Insane. The inmates were also allowed the use of the mails. Night attendants were also provided to prevent suicide, and in 1888 the asylum and training school for the feeble-minded was erected at Owings Mills. After five years of existence the Commission was able to say that no one was unduly restrained or secluded in any institution in the State. Separate buildings were then erected for the criminal insane and suggestions for building a hospital for the epileptic insane were also made. The need of a detention hospital was especially recommended and precaution was taken against outbreaks of fire. The Commission called attention to the need of a reformatory for the need of the inebriates.

Dr. George H. Rohé then submitted a paper on the "Economics of State Care."

In the discussion which followed Dr. George J. Preston said that the subject was of far too much importance to let pass by. He remembered ten or twelve years ago Dr. Savage of London, the well-known alienist, told him that the classification of the insane in Maryland was most remarkable, being divided into white and black. He had reference to Bay View Asylum, which in its early days was large enough, but the insane department of which has grown out of date. There is much to be done for the insane. The State of Maryland is very far behind in their treatment. The number of insane is a matter of doubt; we should be able to say exactly how many there are, especially if we are to have a hospital for acute and chronic cases. This all means a great deal of work for some one. These papers will be productive of some good. If the profession does not take an interest in the insane no one else will, and if the profession does, then the result will be felt.

Dr. Charles G. Hill does not think the aspersions against the Lunacy Boaad are warranted. We have much to do yet to help the insane in Maryland, but that this State is behind all others we very much doubt. Some of the northern and wealthier States may treat their insane better, but on the whole we take better care of ours than many others. Again, reflection upon the law he thinks is all wrong, for he thinks the laws have been well kept and no sane person has ever been detained as insane. But there are plenty of persons who are supposed to be sane who should be confined. He knows of quite a number of paranoiacs in this city.

Dr. J. C. Clarke said that he thought the insane were very

well cared for in Maryland and that the laws were well kept.

Dr. I. E. Atkinson thinks the discussion is not taking the course it was intended; it is not a charge against any one; he knew that the care of the insane was not perfect, but he was surprised to hear Dr. Hurd say that things were as bad as he stated and can hardly believe that the condition of affairs were so bad.

Dr. Mary Sherwood said there was great need for a better care of the insane at Bay View Asylum. She said there was sometimes only one, two or three attendants to sixty patients. There were 400 in the insane department and also 100 more harmless imbeciles who were scattered throughout the building.

Dr. Smart considered the commitments faulty and thought the laws ought to be changed.

Dr. Lee—Some said it was very difficult to get the statistics, as if the Board was at fault. It is very hard to get statistics anywhere. The blanks are distributed and sent to the superintendents of each asylum, or to the physician of each almshouse, and if he would attend to his business and promptly return these blanks filled, the statistics would be very complete. It is only the Board's duty to inspect the statistics which they receive from the heads of the different institutions. Most physicians to the almshouses take no interest because they are politically appointed and from these he is to get statistics.

Dr. Brush said that in order to make any progress we would first have to educate the profession and then the profession would have to educate the public. He referred to a visit he had paid Bay View Asylum several years ago at the request of the Mayor of Baltimore and spoke of the crowded condition there and lack of attendants.

Dr. Osler said that if the Committee from the Faculty and from the Neurological Society would go down to Annapolis and confer with the politicians their results would be better.

Dr. S. J. Fort then related a case of habit spasm in a boy 13 years old, who about a year before had been treated brutally by a teacher who took him by the heels and shook him with his head down until he had a "crick" in his neck, at the same time giving him severe fright. He was a strong well looking boy who from this treatment had developed a general jerking of almost every muscle in the body particularly of the legs, neck and shoulders. He laughed at anything and often at nothing, he talked incessantly and was rarely still. His sleep was unbroken. He was taken to Dr. Fort's Asylum for the Feeble-Minded and was given perfect freedom and allowed to run around the place so that he gradually improved and is now almost well. He was given no medicine. His mother was said to be very nervous, but there was nothing very strong in his family history.

Dr. A. L. Hodgdon then read a paper on "Alcoholic Insanity and Excess." It was discussed by Dr. Charles G. Hill.

Evening Session, 8 p.m.

The special subject for evening, "Peritonitis," was opened by Dr. Simon Flexner, who said that the subject was an extensive one and the manner of approaching it was difficult. He spoke of the pathology and etiology. The peritoneum is able to resist a great deal; it can dispose of foreign substances up to a certain limit. Not all parts of it carry on absorption but only a limited part, that near the central tendon of the diaphragm. Stomata between the endothelial cells do not exist, but fluids may pass through and even solids sometimes escape; they are carried through by cells. Some substances interfere with this power of absorption but quite an amount can be absorbed and even baceteriologic organisms can be destroyed as long as the peritoneum is intact. At the Johns Hopkins Hospital he had a careful record of 110 cases of acute peritonitis in man with the bacteriologic examination and these cases were divided into certain groups. We must admit first of all an idiopathic or primary peritonitis; twelve idiopathic cases were in this number. In all these cases there were preëxisting conditions predisposing to this peritonitis such as chronic heart disease, chronic kidney disease, etc. Persons subject to chronic diseases are more liable to bacteriologic infection. In several cases the peritoneum was one of several serous surfaces involved in the body. There were thirty-three cases of exogenous peritonitis in which the invasion was from without and in those cases laparotomy had been performed and certain operations had been done. Finally there is an endogenous form in which the infection is from within, it is an intestinal form. Fifty out of 110 cases which he found recorded were in the intestinal tract, from a perforated appendix or some such cause. In studying the bacteriology of these cases it was interesting to note that in the first group the staphylococcus aureus and the streptococcus were present as mono-infections. In the second group there are some mono-infection and many poly-infections, such as the staphylococcus and the streptococcus and the colon bacillus, etc. In the third group it usually comes from some injury to the intestines, there is a poly-infection such the streptococcus and the colon baccillus together. Septic and suppurative peritonitis are terms used as if they were distinct conditions. Peritonitis in the absence of the microörganism is very rare, but it may occur. The fibrino-purulent form is the one more usually met with. The mycotic form is one in which the symptoms run such a rapid course that there is little time for the formation of bacteria and there is very little reaction on the part of the peritoneum. This division, however, is not necessary.

Dr. S. C. Chew then spoke of the "Diagnosis of Peritonitis." The diagnosis of peritonitis is in some cases one of the simplest problems which as physicians we can encounter and in others one of the most difficult that can confront us and between these extremes there are very many degrees of comparative difficulty. In general when the typical and clinical symptoms are present a diagnosis is easy. The decubitus, the flexion of the knees on the abdominal walls, the anxious and somewhat drawn physiognomy with acute abdominal pain and great tenderness, typanites, elevation of temperature, quick, small and wiry pulse, all point very clearly to the diagnosis of peritonitis. They are not always this clear; there may be many symptoms lacking. In arriving at a correct diagnosis the history of the patient is very important. The principal affections which might be confused with peritonitis are: 1. An extreme degree of tympanites which occurs in typhoid fever; 2. A condition of acute enteritis or entero-colitis; 3. Hysteric abdominal pains; 4. Intestinal obstruction in which there is more or less pain.

Dr. Charles M. Ellis of Elkton then spoke of the "Medical Treatment of Peritonitis." It is not easy to say when a case of peritonitis belongs to the physician and when one belongs to the surgeon. The tendency is to believe that all inflammations are suppurative and therefore of bacteriologic origin, but not when the bacteria can gain access to the peritoneum. Most cases are traumatic from simple ulcers of the stomach, typhoid ulcers, appendical rupture, ulceration of solid organs, the breaking down of pus sacs near the intestines. In all cases the cause is not so clear, therefore the line of demarcation between medical and surgical peritonitis is not easy to be drawn. Peritonitis that has gone for ten days is more apt te get well than to die, therefore operations after this time are very apt to be successful and recoveries more frequent than is commonly supposed. The first indication of the medical treatment of peritonitis is to give rest to the parts and nature promptly undertakes this by an exudation which keeps every part at perfect rest, a recumbent position with flexed limbs, the head and shoulder being elevated, gives the best rest. A mild saline cathartic should be given at the outset, little food should be given by the stomach and opium is used for the relief of pain. Blood-letting is rarely ever practiced.

Dr. Randolph Winslow then spoke of the "Surgeon's Treatment of Peritonitis." The surgical treatment of peritonitis ought to antedate the disease. If delayed until acute peritonitis is actually in progress the time for successful interference in the vast majority of cases is passed. We ought therefore to be zealous in the early interpretation of those phenomena which point to the onset of this disease and should promptly use efforts to prevent its spread or to forestall its development. All cases of appendicitis ought not to be allowed to go beyond twenty-four or thirty-six hours without operation. When the characteristic symptoms of appendicitis are evident operation should not be delayed. When an inflammatory mass is felt through the abdominal walls there is no time for delay.

Dr. J. M. T. Finney reported several cases from the Johns Hopkins Hospital and also related the results from his experiments on dogs showing how peritonitis artificially produced could be cured if operation were undertaken before a certain time in the dog. This was six and one-half days.

Dr. T. A. Latimer agreed in part with Dr. Ellis and said he did not believe that an operation should be done at the very beginning.

Dr. A. K. Bond said that we should not neglect purgation. This paper was further discussed by Drs. Tiffany, Uhler, J. T. Smith and Winslow.

(To be continued.)

Unsuspected Causes of Rebellious Neuralgias.—When sciatica or neuralgia persists for a long while, uninfluenced by treatment, some osseous lesion of the skeleton may prove the cause. Moutard-Martin describes a case of this kind which lasted two years before it was traced to an iliac osteo-sarcoma. Siredey and Grognot have likewise observed Pott's disease develop after months of a persistent and rebellious neuralgia, or more or less complete paraplegia.—*Presse Méd.*, February 27.

SELECTIONS.

Smallpox Among the Unprotected Aborigines of Canada.—Mr. Pugin Thornton, in an article in the *Lancet*, writes concerning the effects of smallpox on a nation or tribe unprotected by vaccination. He quotes Sir William Butler's statements in his book "The Great Lone Land," as to the Indians of the Saskatchewan district. "Smallpox, in its most aggravated type, had passed from tribe to tribe, leaving in its track depopulated wigwams and vacant council lodges; thousands (and there are not many thousands all told) had perished on the great sandy plains that lie between the Saskatchewan and the Missouri. They knew nothing of this terrible disease; it had come from the white man and the trader. For eighty years these vast regions had known at intervals the deadly presence of this disease, and through that lapse of time its history had been ever the same. The camp moved away, but the dread disease clung to it—dogged it with a perseverance more deadly than hostile tribe or prowling war party; and far over the plains the track was marked with the unburied bodies and bleaching bones of the wild warriors of the West. The summer which has just passed had witnessed one of the deadliest attacks of this disease. Fort Pitt, one of the Hudson Bay Company forts, about 1,000 miles from Lake Superior toward the Rocky Mountains, was free from smallpox, but it had gone through a fearful ordeal; more than 100 Crees had perished close around its stockades. From a spot many marches to the south the Indians had come to the fort in midsummer, leaving behind them a long track of dead and dying men over the waste of distance. 'Give us help,' they cried, 'give us help, our medicine men can do nothing against this plague; from the white men we got it, and it is only the white man who can take it away from us.' But there was no help to be given, and day by day the wretched band grew less. Then came another idea into the red man's brain: 'If we can only give this disease to the white man and the trader in the fort,' thought they, 'we will cease to suffer from it ourselves.' So they came into the houses dying and disfigured as they were, horrible beyond description to look at, and sat down in the entrances of the wooden houses, and stretched themselves on the floors, and spat upon the door handles. It was no use, the fell disease held them in a grasp from which there was no escape, and just six weeks before my arrival the living remnant fled away in despair. I now enter upon that portion of the Governor's instructions which had reference to this epidemic of smallpox. In the immediate neighborhood of Fort Pitt two camps of Crees had established themselves, at first in the hope of obtaining medical assistance, and failing in that—for the officer in charge soon exhausted his slender store—they appear to have endeavored to convey the infection into the fort. It is singular that only three persons within the fort should have been infected with the disease, and I can only attribute this to the fact that Mr. John Sinclair had taken the precaution early in the previous summer to vaccinate all the persons residing there," having obtained the vaccine matter from a Salteaux Indian who had been vaccinated at the mission of Prince Albert, presided over by the Rev. Mr. Nesbit, some time during the spring, and yet there are anti-vaccinationists who are willing and ready to go on the stand and testify that variola is a mild disease, and one that is not necessarily fatal in the unprotected.

Chinese Medicine.—According to Dr. Paul d'Enjoy the Chinese doctors both prescribe and sell their remedies. They have a variety of tricks of trade to make their products attractive. They have luxurious shops, and mollify with licorice and other excipients their badly made and vilely tasting pills. These pills are enclosed in capsules of wax as large as pigeon's eggs, which preserve the compound from contact with the air, and are broken when the remedy is taken. Special preparations are sent out from the large shops of the principal commercial centers. Among the most popular of the specialties are the little brick-red cholera pills, composed of mangosteen bark and various tropical essences, such as santal, eaglewood and calumba. The Dau-nhu-y is a medicinal oil which produces excellent effects in headaches, and generally in cases of brain weariness of every kind. It is rubbed on the temples, and is inhaled by strong breathing, after having been rubbed upon the nostrils. Relief is obtained through the cold which its evaporation quickly produces. The basis of the preparation is camphor, and, as a whole, its effect may be compared to that of the headache pencils familiar in our drug stores. Chinese medicine is chiefly based on plants, and is taught in books which are often very ancient. In his practice the doctor strictly follows the methods of the master by whom he has been taught. With a very grave face, his eyes protected by large spectacles of thick glass, the old physician feels the pulse of his patient, and never fails to make him show his tongue. Next he examines his eyes, and asks a series of questions, the answers to which will help him out in his diagnosis. Then he writes his prescription on a piece of rice paper and hands it to his pupil, who proceeds to compound it. Generally the prescription is made from the directions in some book, which are simply referred to by name or number. The pupil goes to the book for directions. The seeds, herbs, leaves and stems, the essences of which are to be combined to form the remedy, are generally weighed out or measured, and given to the patients with directions to boil them at home with a prescribed quantity of drinking water to a measure which is exactly indicated: "Put all these plants into an earthenware pot with a large glass of water and boil them over a bright fire down to a teacupful; then strain carefully and drink hot." The remedies are all taken in bed, and rest or sleep, if possible, is recommended. The potions as administered have very powerful effects.

A Young Medical Explorer.—Arthur Donaldson Smith, M.D., of Philadelphia, is the author of a book of travel in Eastern Africa that has been described as the most important since that in which Stanley narrated the doings of the Emin Pasha Relief Expedition. Dr. Smith is not yet 35 years old, having been born in the city above named in 1864, the son of Jesse Evans Smith and Martha J. Knight. The current number of *Book News* says he entered the University of Pennsylvania in 1881, and was graduated in the class of 1885. He studied at Johns Hopkins University from 1885 to 1886; the Harvard Medical School, 1886 to 1888, and the University of Heidelberg from 1888 to 1890. This general training bred in him an interest in science rather than in his profession, and after a brief period of practice, he addressed himself to the work of exploration. With the wisdom beyond that of most men who enter the same task he put himself in communication with the authorities of the British Museum and his expedition was provided with a thoroughly trained scientific staff. Dr. Smith organized his party with care, but on a scale modest compared with that of large African expeditions, started from Berbera, moved a little to the north of west until he was stopped at the Abyssinian frontier, and then succeeded, by tact, persistence and great courage, in passing along westward until he reached Lake Rudolf and Stephanie. From this lake he returned to the coast. Where other men have been forced into conflicts with the natives, Dr. Smith peaceably provided himself with provisions. Where previous explorers had lost heavily, he saved all his men and returned to the coast with a loss of six—little short of marvelous. The difficulty of maintaining steady and continuous collection in a strange region was skilfully surmounted and with care taken in packing, brought specimens to London in extraordinarily good condition. The geographical results proved of the very highest value, a large part of four thousand miles never having been previously covered. Smith displayed, as so many Americans have,

all the qualities which make the English explorer successful, with the tact and discrimination and a consideration for others, which adds to mere success something more and better. A man of liberal, but not of large fortune, whose income could be easily overmatched by scores of idlers in any one of our great cities, Dr. Smith has dedicated himself to the work of exploration, and has just started for a trip to Corea where he expects to continue his prowess as a shooter of big game in Africa. In these days of peace, exploration is almost the only outline for the adventurous, and it is difficult to exaggerate the importance to a nation of the discovery from time to time that it produces men who have all the qualities which bring success and safety in war.

Pegamoid; A New Water-Proofing Substance.—Pegamoid is a crystal-clear, gelatinous fluid, which is easily applied to almost any porous material, and will be found to be applicable to a variety of medical and surgical purposes. After a substance has been saturated with pegamoid it resists all and every influence of humidity, acids, oils, and various other fatty substances without the least deprivation of quality and appearance. It is claimed that every texture, from the finest to the coarsest qualities, and also papers of all kinds can be manipulated with this new invention. All fabrics and articles treated with pegamoid can be cleaned with soap and water, so that the invention, because of hygienic considerations, deserves attention. Paper, leather, cotton, linens, silks, woolens, cloth, and other goods treated with pegamoid are water-proof, protected against vermin, and remain entirely smooth, soft, flexible, unsusceptible to the change of temperature and climatic influences. There is no doubt that pegamoid leather in future will prove to be a great competitor of the genuine morocco leather, being cheaper and as fine in appearance, with the advantage of not getting soiled. All kinds of wall paper can be cleaned after the treatment with pegamoid without suffering loss of color. As to the various applications of pegamoid, there is a large field for speculations and I only desire to mention here what has already been confirmed to be a fact. The invention can so easily be applied that scarcely any object in daily use exists in which it might not be of great advantage. One of the most important uses of this invention is claimed for imitation leather, which after pegamoid has been applied to any texture, can hardly be distinguished by touch or otherwise from the genuine article. A special advantage of pegamoid for tapestry consists in its durability. The surface is, notwithstanding its pliability, very solid and does not split, an advantage which genuine leather does not always possess.—*Consular Reports*, March.

A New Bullet for the British Army.—The Lee-Metford bullet has seen its day and a more effective projectile has been called for. In the Chitral expedition one of the enemy had six wounds from the former bullets in his body and was still fighting hard when the seventh toppled him over. According to the *Field* the new missile, the Dum Dum bullet, has accuracy and good range power, caliber .303. Experiments were made on piles of burned and sun-burned bricks, earth in bags and boxes, wet and dry sand, cans full of water, coal, inch planks tied together, boiler plate, skinned sheep and sheep with the wool on. In every instance the regulation bullet passed through and was picked up in a condition almost fit to use again, but the Dum Dum bullet spread out and had best penetration, but there was a greater shock to the material through which it did go, tearing holes in a sheep big enough to put a fist in.

"Then four and five planks were penetrated by the Dum Dum bullet, twelve and thirteen by the other. I believe that a living body offers greater resistance than a dead one. If so, a clothed living body may offer sufficient resistance to prevent its going through. In that case, the whole of the enormous energy would be expended in the enemy's body. Judging by the results on sheep carcases, the hole of exit in a man, if the bullet went through, would be so terribly large that the use of this ammunition would be held to be too inhuman in its effects for use on men or, at any rate, against a civilized enemy. The Geneva Convention would not bar it, for that forbids the use of an explosive in a small-arm projectile, but the effect of the Dum Dum bullet is explosive. I do not see why such a bullet as the Dum Dum should not be used against such uncivilized enemies as the 'Fuzzy' and the Ghizi, who do not 'play the game,' who will not decently fall when hit, but who unreasonably come on after with the advantage of five to one, and even when mortally wounded make things nasty for our men. I shot a wild boar with a Dum Dum at eighty yards. It had its right flank diagonally to me, and the bullet struck just under the backbone, broke a rib, went through a lung and destroyed all the vessels in the throat, lodging in the jaw. The bullet has a small, soft point, where the jacket of nickel does not cover it. This allows the bullet to expand."

PRACTICAL NOTES.

An Application of the X-Rays to Anatomic Preparations.—Diakonof reports that he has made a varied and most instructive use of the Roentgen rays in preparing radiographs of anatomic preparations. Structures like arteries, veins, bronchi and bronchioles may be injected with various materials more or less opaque to the X rays, and the resulting radiograph shows with perfect accuracy their relative distribution. The best material for injecting is mercury, on account of the ease with which it can be manipulated and the fact that the same injecting fluid can be used over and over again. When it is wished to inject two sets of vessels in the same organ and to show their distribution in the radiograph, mercury may be injected into one set and a still more opaque material into the other. The following mixture is suggested: Gypsum, cinnabar and red lead, twenty parts each; flour, ten parts; add enough water to make the mixture sufficiently fluid to flow into the smallest vessels. This mixture is too opaque, and the resulting shadows in the skiagraph too black, to be recommended as a substitute for mercury, but it is useful in combination with it as a contrast. —*Chirurgia*, February.

Untoward Effects in Acute Rheumatism from Sodium Salicylate.—M. Jaccoud has pointed out in the *Journal de Médecine*, etc., February 10, certain of the serious inconveniences that may arise from the employment of sodium salicylate in acute articular rheumatism with visceral localizations. Not only does it not cure these manifestations, but it does not prevent them, and it may even favor the production of certain of them. This drug seems to favor the cerebral symptoms of rheumatism, and its employment should be suspended as soon as delirium sets in, before the diagnosis of cerebral rheumatism is established. This suppression is necessary also if the delirium is of an alcoholic or hysteric nature, or if it arises from any form of intoxication. It is the same also in cardio pulmonary localizations, which are much more important on account of their frequent occurrence. During the past ten years M. Jaccoud has observed that the salicylate acts on the pains and on the fever, but not at all on these localizations, and as it has a depressing action on the heart from the time these symptoms appear, its use must be discontinued. By persisting in its employment involvement of the myocardium in the disease is certainly hastened. Numerous statistics show, moreover, that these localizations are not cured or even prevented.—*New York Medical Journal.*

Large Doses of Olive Oil.—The ultimate disposal of olive oil when given in the enormous quantities frequently heard of, was until recently unknown to me, but is just what consideration of the circumstances would lead one to expect. That the free and available alkalies of the intestines are all seized upon after the fat splitter, steapsin, has separated the esters into

their respective radicals, is not to be doubted. Such a large amount could hardly be saponified, emulsified or absorbed, however excessive amounts of other classes of foods being refused by the economy. That all of it followed the conventional path is not a reasonable proposition, and a recent case enabled me to determine its fate in at least one instance. A confrère had a case of hepatic colic in a victim of chronic malarial disease, and gave two pints of olive oil. Subsequently his attention was directed to some peculiar masses in the vessel. He brought them to me, and I found them to be about the size of marbles, irregular-shaped, translucent, of the consistence of cheese and green in color. The history giving me the cue, I found they were glyceryl palmates colored with oxidized bilirubin. I saponified them with boiling sodium hydrate, precipitated one tube with artificially hard water, salted out another, getting a hard soap. The gallstone was found, and proved to be deposits of cholesterin crystals around an organic nucleus, presumably of mucus or epithelium. The denser palmates were evidently outclassed in the race by the more unstable oleates and came through unchanged. A close analysis of all the feces on an exclusive fat diet of determined composition would be most interesting.—A. T. Mitchell, M.D., in *New York Medical Journal.*

The Causation of Chloroform Syncope.—As the result of personal experince, in conjunction with a critical analysis of the results obtained by other investigators, Hill (*Brit. Med. Jour.*, April 17, 1897, p. 957), concludes that chloroform employed as an anesthetic induces primary failure of the circulating mechanism and secondary failure of the respiratory center. The latter fails to act not only because it is damaged by the drug, but also because of the anemia of the medulla induced by the fall of the arterial tension. This is proved by the fact that the action of the respiratory center can be renewed by raising the arterial tension. The depth of anesthesia depends as does the paralysis of the respiratory center, on the primary fall of the arterial tension. Chloroform, more than other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity. It does this by paralyzing the splanchnic vasomotor tone and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible if the subject be in the feet-down position. Chloroform also produces paralytic dilatation of the heart, acting directly, like amyl nitrite, on the musculature of the whole vascular system. There are two forms of chloroform syncope: *a*. During primary anesthetization. The patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension and finally takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second it is suddenly filled with blood. This is drawn from the lungs and is full of chloroform. The chloroform passes into the coronary arteries and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously or the pulse before the respiration. *b*. During prolonged anesthetization. This form of syncope arises gradually from giving too much chloroform. The arterial pressure falls lower and lower and secondarily the respiration ceases because of the anemia of the medulla. The heart is in this case not paralyzed by chloroform because the drug is taken in gradually by the shallow respirations and is distributed slowly by the feeble circulation. Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope. Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse the patient should be put in the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this maneuver and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated. Inversion, that is placing the subject in the feet-up position, or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless. In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished and chloroform may easily be the last straw to completely paralyze the circulation. Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope. Ether is in every respect a far safer anesthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform. The chloroform inhaler should be removed when the patient struggles or the respiration is of irregular depth. The work of all physiologists goes to prove that paralysis of the circulatory mechanism and not of the respiratory center is to be dreaded by the anesthetists.

Tuberculosis Treated by Tuberculin in a Solution of Peroxid of Hydrogen.—Hirschfelder of San Francisco offers a provisional report as to his use of a modified tuberculin which he terms "oxytuberculin," a compound that is prepared as follows: Sixty cubic centimeters tuberculin is added to 240 cubic centimeters of a 10 per cent. solution peroxid of hydrogen, and water added until the whole measures 936 cubic centimeters. This mixture is placed in a flask, stopped with cotton, covered with a rubber cap, and sterilized in the steam sterilizer for ninety-six hours. At the end of this time the liquid is dark and turbid; it is clarified with caustic soda solution and 5 per cent. of boric acid is added to the liquid, which is filtered and is then ready for use. To meet the secondary mixed infections, he has prepared an oxysepsin which is used hypodermically with the oxytuberculin. These liquids cause no greater local disturbance than an indifferent fluid would produce; there is no reddening of the skin or other signs of localized inflammation. In a few minutes the fluid injected is absorbed and the patient has no further inconvenience; there is no rise of temperature, or any other unpleasant constitutional effect. Within a few days the cough and expectoration diminish, and the most striking effect is the rapid improvement in the appearance of the patient. His eyes become bright and his color changes from the gray hue of tuberculosis to one more nearly resembling that of health. The appetite rapidly returns and with it a feeling of vigor. This is especially evident in very early cases in which there is little or no fever. In cases in which only slight fever is present, a high temperature soon diminishes and in many instances becomes normal. At the same time the inflammation of the lungs gradually disappears, so that examination fails to reveal any deviation from the normal. The bacilli in the sputum may rapidly diminish and finally disappear altogether. As far as can be known from the comparatively short observation of the method, it having been first begun in November, 1895, the patients that recover remain well. In cases of laryngeal tuberculosis the ulceration rapidly cleans and becomes changed into a granulating surface that soon heals. In one case of tubercular infection of the hand that showed no sign of improvement under ordinary treatment, a rapid healing was produced by a local application of the oxytuberculin. The formation of granulations in this case, and in ulcerations of the larynx, was quite striking. The history of several cases was given in full, showing very favorable results from this mode of treatment.—*American Therapist*, March.

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SATURDAY, MAY 22, 1897.

ENTEROPTOSIS AND EXOPHTHALMIC GOITRE.

The pathology and etiology of exophthalmic goitre are still to some extent open questions and additional contributions in the way of hypothesis are at least worthy of mention as filling out or perhaps as encumbering the literature of the subject. The latest contribution in this line is that of Dr. C. SCHWERDT, whose brochure, editorially noticed at length in the London *Lancet*, endeavors to prove that it is often the direct effect of misplacement of the abdominal viscera—enteroptosis, or GLENARD'S disease—which he attributes to a primary nervous weakness leading to loss of tone in the muscular system and elsewhere and consequent yielding of the abdominal rigidity upon which the proper position of the viscera largely depends. These being misplaced cause constipation, accumulations of fluids and gases in the stomach, obstruction to the circulation and absorption and retention of waste products with consequent auto-intoxication. Then, apparently accepting the MŒBIUS theory of hyperactivity of the thyroid gland, as the condition underlying the phenomena of exophthalmic goitre, he claims that this excess of function is an effort on the part of the thyroid to counteract this autotoxis, and that in this indirect way the neurasthenia is the cause of the symptoms. The symptoms of exophthalmic goitre have in some respects and in some cases a resemblance to those of GLENARD'S disease, and this is made the most of by the German author, in support of his theory of the overtasking of the thyroid in its effort to relieve the poisoned organism.

The doctor's views are suggestive, but he goes only a very little way in accounting for the origin of exophthalmic goitre. Like some other disorders of ductless glands which have a known or as yet unknown action on the general nutrition, it has undoubtedly a nervous origin and the conditions of neurasthenia, themselves imperfectly understood, may well have their influence in its origination. It is also very possible that whatever interferes with the due processes of excretion may help to induce it or favor its development. It will certainly be of interest to notice in the future the coincidence of the disorder with enteroptosis, floating kidneys or any other abnormality of the abdominal viscera. Is its comparative frequency in women due to any degree to the abdominal displacements caused by corsets or tight lacing? Were this very largely the case it would seem that it ought to have been earlier recognized and far more prevalent in times past than would appear to have been actually the case from any records at our command. What actual or presumptive evidence is there that the thyroid functioning can in any way compensate for or counteract intestinal or renal auto-intoxication as is assumed by Dr. SCHWERDT'S theory? These and other questions are naturally suggested and need an answer before any one can fully accept his views. At best it is only a suggestion of one possible existing cause of the disease; the real nervous mechanism underlying and originating the disordered function of the thyroid, if we can accept that view as to its pathology, or the morbid state of the sympathetic system or of the brain itself, remains yet unexplained. The assumption of the existence of an auto-intoxication, which seems probable, is not enough to account altogether for a disorder that is so apt to suddenly follow nervous and emotional disturbance as is exophthalmic goitre; a special primary complication of some important portion of the central nervous system must apparently first occur. What this is, or even what it is likely to be found to be, is yet a question that remains to be answered.

Dr. SCHWERDT attributes to enteroptosis other disorders—scleroderma and myxedema—but in regard to these he apparently makes a less probable case. His paper has the merit of suggestiveness and of pointing out a line of inquiry that may possibly develop some addition to the sum of our knowledge of exophthalmic goitre.

SUICIDE BY SUGGESTION AND LIFE INSURANCE.

According to KRAFFT-EBING, a German woman who recently insisted on committing suicide at a certain date, was the victim of hypnotic suggestion by

her husband, who had insured her life for $10,000, the policy terminating on the day of the suicide. It is rather astonishing, considering the tendency of life insurance companies to use all legal methods of avoiding payment of policies, that this plea has not been entered before. It is a perfectly valid plea, but of course the burden of proof would rest on the insurance company. Suicidal races like the Germans could be easily hypnotized into a state of susceptibility to suggestion as to date and manner of suicide. This would be difficult, however, in the English-speaking races when the subject is not insane, criminal or neuropathic. Many states of slight emotional depression, however, render the patient peculiarly susceptible to suicidal suggestions, of whose source the patient would be so entirely unconscious as to regard it as arising in his own mind or else hallucinatory in character. Cases have been observed in which melancholiacs had attempted suicide in various ways, accidentally or unintentionally suggested by persons in contact with them, but of whose suggestion they were unconscious as they ascribed the attempt at suicide purely to an impulse. It would be perfectly possible therefore in a melancholic patient to suggest suicide in a particular way and at a particular time without the patient being aware of the true source of the suggestion. It has happened that melancholiacs have had various ideas suggested to them, by an examination of whose source as connected with the examination they were totally unconscious, although they remembered the examination itself. From a forensic standpoint, the case of KRAFFT-EBING is of peculiar interest, not merely as related to the possibilities of suggestion in hypnotism, but also of its possibilities in other mental states. As such suggestions would undoubtedly be criminal under the common law the accused would have the benefit of a reasonable doubt, which would throw the burden of proof very severely on those alleging the existence of the suggestion. For this reason it is probable that life insurance companies will not benefit very much by raising this plea in cases of suicide.

THIRTY-SECOND ANNUAL MEETING OF THE MICHIGAN STATE MEDICAL SOCIETY.

This meeting was held at Grand Rapids, May 13 and 14. About two hundred and fifty members were present. This society does its scientific work in three sections viz., medicine and obstetrics; surgery and ophthalmology; gynecology and abdominal surgery. The first section occupied one session in discussing preventive medicines in a series of five papers, each presenting some especial phase of the subject, followed by a discussion of the topics presented in the papers. The second section by a series of four papers discussed the nature and diagnosis, surgical and medical management of cancer of the stomach. The section on gynecology by a series of four papers discussed uterine displacements. Besides these were many other papers in each section discussing varied topics, mostly practical in their nature, often of intense interest, frequently illustrated by a presentation of the actual cases, proving the results obtained. The interest was great and persistent in the work of each section, all the rooms provided for the meetings being filled to the overflowing.

Eighty and more new members were added to the rolls. The social arrangements made by the hosts of the society at Grand Rapids were in accord with the well known hospitality of the city, a reception on the night anterior to the opening of the session, brought the members into full touch with each other; a banquet to members and their wives on the evening of the first day, still further strengthened the bonds of fellowship.

The annual addresses were of especial interest; Dr. STRANGWAYS discussed "Our Profession; a Compound of Art, Science and Business" Dr. CARSTENS discussed "Specialists and Specialism;" Dr. SHURLEY analyzed "The present Status and Prospects of the Art of Medical Practice"; while the President, Dr. MCCOLL, gave a most interesting account of observations, made during a recent trip around the world, of the Plague in India. This part of the work of the Society was of unusual interest, giving opportunity to discuss topics out of order in the several sections or the general sessions.

Perhaps the most important action of the Society related to its modification of its methods of securing members. Formerly it has been accustomed to receive into fellowship no person not present at the meetings. Henceforth it will receive as members applicants who are not at the meetings, under the same conditions as those who are present. Formerly it mattered not whether an applicant was a member of a local society or not; henceforth members of local medical societies are received into fellowship at any time on the recommendation of the president and secretary of the local society, without reference to the Committee of admissions, or vote of the Society. This can be done at any time of the year, and without attendance at a regular meeting. Such action will strengthen the local societies, because their members when applying for membership, have only to pay their dues for the current year and agree to support the constitution and by-laws. All others have to be passed upon by the committee on admissions and be recommended by two members of the State Society, and receive a two-thirds vote of the Society at a regular meeting, sign the constitution and by-laws and pay their membership fee and annual dues. Henceforth every person will know that when the State Society recognizes a local medical society, it recognizes its membership as on an equal footing with

its own. To guard the State Society against the reception of unworthy members, the committee on admissions is given the duty of examining the local societies as to the fitness of their membership to a place with the members of the State Society.

It is believed that this act of trust and privilege, given the local societies by the State Society, will stimulate the formation of new societies in districts now without a local society, and will augment the membership of those now existing. Besides that, it is in accord with the practice in many of the States. Further, the Society directed the committee on admissions to take all possible steps to develop the formation of new medical societies in unoccupied fields, just as the adherents of religious or fraternal bodies seek to form new churches or lodges in fields of humanity not fully occupied. It is hoped that each other member of the Society will omit no opportunity to do the same sort of missionary work among medical men as they are able. The State Society offers especial advantages to the members of these societies beyond those given to outsiders, advantages attended with increased honor. It is believed that this notable enrichment will aid materially in the gathering of medical men regularly together, to discuss the science and art of their profession and strengthen the bonds of personal fellowship. The lack of these things, is the great element of weakness of the medical profession.

In short, the Michigan State Medical Society, has taken the first steps to develop local medical societies to the fullest extent under existing conditions. It should have been done a quarter of a century ago, but the fact that it has begun now greatly encourages its thoughtful members.

To further aid in the work of increasing the coöperation of the profession, it appointed a committee to study the question of establishing a journal of the Michigan State Medical Society and report at the next annual meeting. Many of the members who have given attention to this matter believe that such a journal could be started and maintained greatly to the advantage, not only of the State Society, but all the local societies, and every other medical organization, and all the interests of the profession.

Others are looking for more light, and the committee is expected to make such an exhaustive study of the matter, as to enable the society at its next meeting to act intelligently in the matter. After listening to the results of the study by a committee for a year, the Society decided that it was unwise to establish the regular meeting of the Society in any one city.

It thus appears that the most notable action of this meeting was its radical change in its relations to medical societies; the outcome of this action will be watched with interest by every friend of medical organizations. There can be no question as to the correctness of the principles involved; the only question is respecting the vigor with which they are operated by individuals in the Society. If every member does what he or she can to promote their fullest development, the profession of Michigan will develop far more rapidly than in the past; it will be able to secure a unity of thought and action upon topics which have a common interest.

The officers elected for the ensuing year were: President, Dr. J. B. Griswold of Grand Rapids; Vice-presidents, Drs. E. L. Shurley, Detroit; E. W. Davis, Saginaw; G. C. Huebner, Ann Arbor and C. B. Burr of Flint; Secretary, C. H. Johnston of Grand Rapids; Treasurer, W. G. Henry of Detroit; Members of the Judicial Council, A. W. Alvord, Battle Creek, J. E Emerson, Detroit, Perry Schurtz, Grand Rapids.

The next meeting will be held in Detroit, with Dr. E. S. Sherrell as Chairman of the Committee of Arrangements.

SURGICAL OPERATIONS IN THE DAILY PAPERS.

Since medicine and surgery became established upon a scientific foundation certain distinctions have served to indicate to the general public the line of separation from charlatanry. To make such distinction the methods of advertising in the public prints common to quacks and nostrum venders have been interdicted on the part of the regular medical profession. In fact this is the chief criterion by which the public has learned to distinguish between scientific physicians and pretenders. Modern ingenuity in advertising as utilized by irregular practitioners and proprietors of patent medicines has so closely simulated ordinary reports of medical and surgical cases that the lay reader is often misled. This confusion is increased when regular physicians adopt the methods of charlatans to report so-called remarkable cases in the daily papers.

This vicious practice has been so frequently condemned by the medical press and by medical societies that it would seem useless to continue to animadvert upon the subject; but the eagerness of certain members of the profession to attract public attention oversteps at times all bounds of professional decorum and decency. In some instances this abuse is so often repeated that one might infer that a surgeon has adopted the practice of reporting every major operation he performs in the daily papers. Some common surgical operation is described in detail, headlined as a "Triumph of Surgery," a "Delicate Operation," "A Remarkable Case," etc., with exaggerated and sensational descriptions of ordinary surgical methods. The details, however, are usually sufficiently accurate to show that the source of reportorial information is in the surgeon himself, who seeks such notoriety as a "near cut" to public favor and patronage.

Apart from the position in which the profession as a whole is placed by such methods, the advertising surgeon is taking a most unfair advantage of his colleagues. The profession is scandalized by such conduct and should by a vigorous public sentiment condemn all such disreputable methods. When a physician or surgeon adopts the advertising methods commonly practiced by charlatans he is breaking down the barriers between scientific medicine and quackery and has no right to expect the respect and confidence of his professional brethren.

THE NEW YORK MEDICAL LEAGUE.

In another column will be found a letter from Dr. DOUGLAS H. STEWART setting forth the aims and purposes of this new creation. From it we gather that the primary and ulterior purpose of this organization is to put a check on and suppress hospital and dispensary abuses and encourage physicians to more actively participate in those affairs, municipal or State, which concern their own interests. It is most extraordinary what it has already accomplished in its three months' existence. Its membership now numbers over five hundred practitioners, and while other medical societies have contented themselves with passing ephemeral resolutions, the League has succeeded in passing a bill through the State Legislature of New York which strikes a crushing blow at the dispensary evil, and when it goes into effect, in November, many of the dispensaries in the State will necessarily go out of existence. There is, indeed, but little doubt, from what we have learned of its *personel*, that this organization of physicians will inaugurate a most radical revolution in the body-medical, and it is probable that it may even have branches in several of the progressive cities in the United States.

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to take the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. The time limit of ten days is as long as granted by any other route. See advertisement in another column, and make no mistake. The JOURNAL guarantees the most perfect of modern railway equipment.

CORRESPONDENCE.

What Constitutes Readable Print? Satinized, Light-Reflecting White Paper Fatigues the Eye.

ST. LOUIS, MO., May 15, 1897.

To the Editor: — I herewith send you a few crumbs in answer to your call for a discussion of the paper on which the JOURNAL should be printed, because I am convinced that it will be calculated to do good service by directing attention to very important questions, which must be of great practical interest to the human race both in this and future generations.

The question of the size and form of printing type, and the color of the material for background, is not only of great importance to the comfort of adults, but it is of far greater importance to children and those who quite naturally look to the typographical and mechanical features of the JOURNAL for a model.

What constitutes readable print? The most readable print is that by which one may obtain the maximum of reading, with the minimum of injury to the sight.

It is first necessary to have a clear idea of the word, readable, as applied to the impression of type.

Letters upon paper can be read without fatigue only when there is a marked contrast between the letters and the ground. This contrast may be of tone, of colors, or both.

Contrast of tone is the most favorable condition for distinct vision if we consider white and black as the two extremes of a scale, comprehending the gradations from normal gray; in fact, black letters upon a white ground present the maximum contrast of tone, and may be read in a perfectly distinct manner without fatigue in diffused light. Indeed, all whose sight is enfeebled by age require the utmost contrast of tone. The word "tone" of a color is here employed exclusively to designate the various modifications which that color, in its greatest intensity, is capable of receiving from white, which lowers its tone, or of black, which heightens it.

The light we employ to supply the place of the sun changing the relations of color under which the same bodies appear to us illuminated by daylight, it is evident to us that if we neglected this difference of relation, it would give rise to error, because any assortment of colors favorable to read in diffused daylight, might be less so by artificial light; therefore we will put aside the most desirable of all papers, the pale brown—or the paper recommended to reduce the contrast of tone, having a brownish or yellow hue when the deep black printer's ink is used—for there are some mechanical difficulties attending the perfect execution of toned papers, as well as that of expense.

All are of course familiar with the effect produced by the maximum contrast of tone, that of black print with a satinized (glossy) light-reflecting white paper, giving the greatest stimulation of the retina, and consequent fatigue.

More important factors, perhaps, in the readableness of print than tone and color of the ink and paper, are the size of the type and its corollary, length of line, to which may be added the direction of the line across the paper.

That printed lines should not be much longer (not more than fifty letters) than are found in the JOURNAL, may seem of little importance to the general reader.

The popular prejudice in regard to the double columns on a page would be untenable, were it not that the same economy which restricts the amount of space also reduces the size of the type and crowds lines together. A double column page which is properly printed and divided, is most certainly preferable to the same amount of matter extending in a single line across an entire page. It has been accepted by oculists that type embraced by an angle equal to five minutes, is the smallest printed matter which can be recognized by the average normal eye. According to this formula, the smallest print a normal eye can readily distinguish at a distance of one foot is about 1-50 of an inch; at eighteen inches (the average distance at which a book is held by an adult), the smallest recognizable type would be about 1-32 of an inch. The normal eye should never be subjected for any length of time to a type smaller than twice this size, that is 1-18 of an inch, and it would be better after middle life to employ a type even a little larger than this.

The fact, however, that spectacles are now so commonly used, removes in a degree by restoring to the focalizing power the necessity of a larger type with advancing years.

Too coarse print—such as "English type" or "long primer"—is wearisome to the eye, as it requires more exertion of the rotator muscles which govern the movements of the eye, that is, for a given amount of matter; and especially is this the case when the breadth of the page is, as usually happens, increased so as to keep the just proportion of matter on a line.

The type must be of a size to maintain a just relation between the length of the line and the ideas to be conveyed by the printed matter, but not so small as to require an effort to decipher it, and these lines must not be long enough to cause fatigue by undue use of the rotators of the eye.

No print is readable enough to preserve the sight of those who in defiance of fixed natural laws subject their eyes to a greater or longer strain than that to which the animal economy is adapted.

Vision should be looked upon as a physical capability, just as well fitted to be recognized as a point of merit in our daily exercises, such as walking, bicycle riding, running or jumping, etc.

Résumé.—1. For reading: Heavy faced type in contradistinction to light faced, properly leaded, with spaced lines, should alone be employed.

2. A dead faced white paper (with a non-reflecting surface) has considerable influence upon the ease with which the act of vision is performed and therefore should be preferred.

3. A very light almost imperceptible yellow tint paper is recognized as the best, that known to paper-makers as "natural tint" from the fact that it contains no dye whatever and has been bleached only to a moderate degree; it has the color of unbleached cotton cloth. This paper, however, is expensive. A likely substitute made from wood pulp or straw can be had in some of the second class papers in a brownish or yellow tint with a dead or non-reflecting surface at a moderate cost.

Respectfully submitted, WILLIAM B. MEANY, M.D.
3907 West Belle Place.

Blackboards in Schools.

AUSTIN, TEXAS, May 14, 1897.

To the Editor:—In your issue of May 1, page 854, Dr. A. C. Corr says: "The blackboards ought to be clean black," etc.

The *color* of school exercise boards is a matter of great importance, but has been strangely neglected. For, from time immemorial, it has been a fact of common knowledge, even among uneducated people, that *black* is the worst of colors for the eyes; hence, it has long been a custom with tailors, to charge more for making a *black* suit of clothes, than for any other color. For many years we have given schoolroom hygiene much special study, and have long taught, by word and pen, that school exercise boards should *not* be *black*.

The best color for such boards is some shade of cream white, a dead surface of soft, mellow tint, varied in its degree of whiteness to suit the quality and quantity of light afforded.

The crayons for said exercise boards, for ordinary daily use, should be a clear sky-blue color; the extra colors, a canary orange and a clear dark green.

Q. CINCINNATUS SMITH, M.D.
617 Colorado Street.

Medical League.

NEW YORK, May 11, 1897.

To the Editor:—In answer to many inquiries about the New York Medical League, and hoping to set at rest many vague editorial surmises as to its purposes, I send you the following preamble from its constitution.

The objects of the League shall be:

1. To unite fraternally Doctors of Medicine, in good standing, for mutual protection and benefit, by advancing the interests of its members professionally, financially and politically.

2. By united action to secure the enactment of such laws as shall benefit the medical profession.

3. To influence Doctors of Medicine to be good citizens, in the highest sense of the term, and to urge upon them the necessity of taking active part in matters pertaining to State and local government and of voting at every election.

4. To collect evidence of hospital and dispensary abuses and to exclude well-to-do persons from medical charities, thereby securing proper care and attention for the worthy poor.

5. To secure the adoption of laws commanding the appointment by the courts of medical experts qualified for their work.

The League in its constitution and by-laws has provided with due care for all the necessary work to promote the aims above mentioned. You can readily see that there is nothing secret or underhand about the League, and its objects, being so worthy and timely, must commend it to the profession of the whole country. Granting that the present financial depression is shared by us, we must admit that the many and increasing abuses of medical charities enter largely into the vital question, Are the wages worthy of the physician? Heretofore we have suffered greatly in all matters pertaining to our profession because of lack of union, and this indifference to self-protection on the part of the physician the League seeks to remedy.

The class legislation against physicians is evidenced by:

1. The law in New York City that the president of the health board must not be a physician.

2. The exclusion of all men not connected with college faculties from all public hospitals, by the Commissioner of Charities.

3. The exclusion of all physicians from the Board of Charity Commissioners, which controls all the public hospitals.

4. The utter disregard of municipal authorities of all advice by physicians upon all questions of public hygiene.

5. The unsatisfactory position in which physicians are placed when called upon to answer malpractice suits, generally, as we know, originating in imagination and malice, if not plain blackmail.

The above statements are sufficient to warrant the formation and extension throughout this Republic of a League which shall ensure to the physicians equal rights, protection and strict justice. The motto of the New York Medical League is "Fiat Justitia, ruat Cœlum."

Yours sincerely,
DOUGLAS H. STEWART, M.D.,
Cor. Sec. N. Y. M. L.

"Medical Instruction of the Laity in the Lay Press."

MILWAUKEE, WIS., May 17, 1897.

To the Editor:—I was considerably interested in the letter of Dr. Shastid published upon the subject of medical education of the laity. It must be admitted that the Doctor's idea is very clever and ingenious, but altogether impracticable for the following very simple reasons:

Doctors possess the same human nature as do other people, and it is altogether unreasonable to expect them to devote their time to writing articles unsigned and for no pay. Physicians, merely because they are more humanitarian than people of other professions, should not be asked to devote their time and talents for the medical education of the people without financial remuneration or fame. I might urge other objections to the Doctor's scheme, but the one mentioned is greatest, for it would be simply impossible to secure a good staff of writers who would write anonymously and for nothing.

This is not intended to detract in the least from the philanthropic character of the profession, for, while doctors may be expected to treat people for nothing, it would be unreasonable to expect that more time should be consumed in the production of scientific literary work, gratis. It would be short of impossible to get together men of acknowledged ability to further the scheme proposed by Dr. Shastid.

Very truly, A. L. HERRON, M.D.

ASSOCIATION NEWS.

The Philadelphia Meeting.

It has been necessary to make certain minor changes in regard to the various places for Section meetings and also concerning the different hotels which have been placed upon the list by the sub-committee on Reception and Accommodation, of which Dr. de Schweinitz is Chairman. In order that this corrected list of meeting places and hotels may be in the hands of every member of the ASSOCIATION we republish it below.

All persons desiring to register at the meeting, if not delegates or permanent members, must bring certificates of membership and good standing in their State or County Medical Society.

The General Sessions will be held in the Main Auditorium of the Academy of Music, Broad and Locust Streets at 10 A.M. and close at 1 P.M.

Headquarters, Hotel Walton, Broad and Spruce Streets.

Registration Office in the lower corridor of Horticultural Hall, Broad Street below Locust.

Post Office in the outer vestibule of Horticultural Hall.

The Bureau of Registration and Post Office will open May 31st, at 1 P.M.

THE SECTIONS MEET AT 9 A.M. AND 3 P.M.

Practice of Medicine in the Broad Street Theater.

Surgery and Anatomy in the lower hall of Horticultural Hall.

Obstetrics and Diseases of Women in the Main Auditorium of Beth-Eden Church, corner of Broad and Spruce Streets.

Neurology and Medical Jurisprudence in the hall 1415 Locust Street, third floor, rear.

Ophthalmology in the northeast Banquet Room, tenth floor, Hotel Walton, Broad and Locust Streets.

Laryngology and Otology, Hall 1415 Locust Street, fourth floor, rear.

Materia Medica and Pharmacy, Hall 1415 Locust Street, third floor, front.

Diseases of Children, Hall 1415 Locust Street, second floor, rear.

State Medicine, Hall 1415 Locust Street, fourth floor, front.

Dermatology and Syphilography in the Foyer of Horticultural Hall.

Physiology and Dietetics in the Banquet Hall of Hotel Stenton, Broad and Spruce Streets.

Dental and Oral Surgery in Parlor D, Hotel Walton.

COMMITTEE ROOMS.

The Executive or Business Committee in Parlor C, Hotel Walton.

The Judicial Council in the Ladies' Lower Parlor of the Academy of Music.

The Trustees in the Ladies' Upper Parlor of the Academy of Music.

The Nominating Committee in the Central Room, Hotel Walton, Broad and Locust Streets.

RATES QUOTED BY HOTELS TO DELEGATES OF AMERICAN MEDICAL ASSOCIATION, JUNE, 1897.

Hotel Walton, Broad and Locust Streets: $3.00 and upward per day, European plan only.

The Colonnade, 15th and Chestnut Streets: $1 and upward per day, European plan; $3 and upward per day, American plan.

The Lafayette, Broad and Chestnut Streets: $1 and upward per day, European plan; Table d'Hôte: breakfast 25c, to $1; luncheon, 75c.; dinner $1.25.

The Bingham House, 11th and Market Streets: $2.50 and upward per day, strictly on the American plan.

Hotel Stenton, Broad and Spruce Streets: $2 and upward per day, European plan; $4 and upward per day, American plan.

The Continental, 9th and Chestnut Streets: $3 and upward per day, strictly on the American plan.

The Windsor, 11th and Filbert Streets: $1 and upward per day, European plan; $2 per day, American plan.

The Stratford, Broad and Walnut Streets: $1 and upward per day, European plan only.

Girard House, 9th and Chestnut Streets: $2.25 to $3 per day, strictly on the American plan.

Hotel Hanover, 12th and Arch Streets: $2.50 per day, strictly on the American plan.

Aldine Hotel, Chestnut Street above 19th: special rates to members of the AMERICAN MEDICAL ASSOCIATION, $2.50 per day on American plan; $1 to $3 on the European plan.

The price quoted in each instance is for one person only. Rooms commanding only the lowest price are naturally limited in number. It is especially desirable that each member intending to be present at the meeting shall personally, or by letter, make his arrangement with the hotel at which he desires to stop.

Department of Public Health.—There will be a meeting of the Special Committee on "The Department of Public Health," at the Hotel Walton, Philadelphia, at 8 o'clock, P.M., Monday May 31, 1897.

U. O. B. WINGATE, M.D.
Chairman of Committee.

Executive or Business Committee.—The first meeting of this Committee will be held in Parlor C, Hotel Walton, cor. Broad and Locust Streets, Philadelphia, on Monday May 31, 1897, at 5:30 p.m. Subsequent meetings will be held at the same place and hour, unless otherwise ordered by the committee, for the consideration of matters referred to it by the ASSOCIATION, and for the transaction of business.

L. DUNCAN BULKLEY, M.D.,
Secretary of Committee.

BOOK NOTICES.

Diseases of the Eye, and Ophthalmology. A handbook for physicians and students. By Dr. A. EUGEN FICK, University of Zurich. Authorized translation by ALBERT E. HALE, A.M., M.D. Philadelphia: P. Blakiston & Co. 1896.

We have at the present time a number of such excellent works on ophthalmology by American authors that we should not think it worth while the trouble of translating a foreign work unless it possess some particularly striking merit to distinguish it from our home productions.

But this book can not lay any claim to such distinction. The phraseology is often very ambiguous; as for instance, in the explanation of the shadow-test, of which we have seen far better descriptions in American works.

The information on some of the more important diseases is very defective. To illustrate, in the treatment of granular conjunctivitis the author recommends the excision of the folds, which operation has long since been abandoned as irrational; but no mention is made of the expression of the trachoma follicles, though this method is recognized, in this country at least, as the most efficient treatment.

The only operation for entropium described in detail is the obsolete method of Gaillard's sutures, which the author himself pronounces useless; for he says: "I have seen so many failures after Gaillard's operation that I have abandoned the method."

But the most unsatisfactory part of the book is the treatment of the anomalies of refraction and the ocular muscles. It is evident the author does not lay as much importance upon accurate refraction work as American oculists do, nor does he seem to recognize the far-reaching influence of refraction and muscular errors upon the nervous system, for which conclusive proofs have been furnished by thousands of clinical observations in this country. The majority of American oculists we are sure, will seriously hesitate to regard as a trustworthy guide for physicians and students a book which contains statements like this: "Young persons with slight hyperopia (up to 2 D) can usually see well both near and far objects. They need no treatment."

Catarrhal Diseases of the Respiratory Passages. By J. M. G. CARTER. Pages 135. Chicago: E. H. Colgrove. 1895.

This condensed treatise on catarrhal diseases of the respiratory passages is a well written and interesting essay rather than a text-book, and practitioners will find it good reading, containing many valuable ideas and pleasing theories. The chapter on catarrhal rhinitis and pharyngitis is the consideration of the subject from the standpoint of the intelligent general practitioner, and the conclusions drawn from a large experience are both valuable and interesting.

Diseases of the Ear, Nose and Throat and Their Accessory Cavities. By SETH SCOTT BISHOP, M.D., LL.D. Illustrated; pp. 496. Philadelphia, New York and Chicago: The F. A. Davis Co. 1897.

This condensed work covers a special field which has not been generally combined under one cover by American authors. The work is concise and practical and will be of undoubted value to general practitioners who must include this class of work within their field.

It is easily seen that the author is a close follower of the principles and practice of the great Politzer and that portion of the work devoted to diseases of the ear can only be spoken of with praise.

PUBLIC HEALTH.

Unfavorable Tidings of the Plague.—A dispatch from Bombay to the *Daily Mail* of London, May 14, says that the bubonic plague is ravaging the Cutchmandvi district. There have been 2,000 deaths in a fortnight, and half of the population have fled.

A Conflict of Benefits.—Bayonne, a suburb of Jersey City, N. J., is in arms against a proposed trunk-line sewer, fifteen or twenty miles in extent, with an estimated discharging capacity of 70,000,000 gallons per diem and at a cost of construction of about $6,500,000. The object is to provide a drainage for the lower Passaic Valley and the city of Newark. The claim of the Bayonne citizens is that a nuisance would be created on their Newark bay shore, where there is no deep water of sufficient tide to afford relief. Besides they maintain that the Jersey Central drawbridge built on spiles across the bay would prove a barrier to the flooding away of the great volume of sewage. Engineers who advocate the project aver that the sewer in question might be advantageously continued across Staten Island into New York Harbor. Still all the parties to the controversy have not been called into counsel.

Administrative Aspects Regarding Pneumonia.—At the January quarterly meeting of the Michigan State Board of Health the question of the communicability of pneumonia and of public health duty in respect of the same was brought forward by Professor Fall, who mentioned that there had recently been brought to his attention an outbreak of pneumonia which tended to show the communicability of the disease. There were five cases with two deaths, which all seemed to have been spread directly, one after another, from preceding cases. That pneumonia is a germ disease has been demonstrated; that it is a dangerous communicable disease there is no question. It is now known that exposure to cold and to the germs causes pneumonia. There are at least two species of germs, either one of which causes pneumonia. Just which one was present in this instance was not ascertained. Probably, after a time, we shall be able to distinguish the different forms of the disease due to the different germs. But, before this can be done, physicians who have such outbreaks in charge must see that, from the germs present, cultures are made by some competent bacteriologist, and records must be made of the signs and symptoms, so that these may be compared with those in outbreaks due to the different germs. Pneumonia is a disease which causes many deaths in Michigan in every year; and while the State Board of Health has done much for the education of the people preparatory to its restriction, the board has not yet recommended isolation of patients as in diphtheria, scarlet fever and smallpox. It is anxious to collect all the information it can, bearing upon the modes in which pneumonia is spread, in order that, as soon as practicable, the best measures may be recommended for its restriction. Ballard's investigations at Middlesboro have pointed to a common cause, as sewer air accompanied with defective drainage, as being an agency in the incidence of a pneumonic series quite as probable as the communicability from case to case. It is difficult without the closest inquiry to separate these two classes of cases. Pneumonia has been known to be "epidemic" in jails or other crowded institutions and the disease has sometimes been regarded as infective by some reporters, while others have traced it to some aerial contamination common to the inmates of the institution. One matter of clinical history of the disease that seems to militate against the theory of contagiousness is the fact that, so far as our knowledge is concerned, it has never been found necessary, in hospitals and asylums, to isolate the cases of pneumonia. It may have been done in some special instances, but if so, those instances have escaped our notice. There is room for much careful study in relation to the bacteriology and clinical history of the so-called "pythogenic pneumonia." One point in the administrative relations of the disease is apparent, namely, it is important that in all cases where communicability of pneumonia is suspected, the local health authority should be notified of the fact.

Sanitary Arrangement of Vermont School-houses.—In compliance with No. 102, Laws of 1896, the Vermont State Board of Health, hereby issues the following recommendations and regulations for "lighting, heating, ventilating and other sanitary arrangement" of school-houses. In the choice of a site for a school-house, its construction and furnishings, the following directions are to be observed as far as possible:

1. The site should be upon a slight elevation with soil dry and well drained. 2. If in a village, it should be at a point free from noises and unsavory odors. 3. If in the rural portion of a town, at a point free from violent winds. 4. As near the center of school population as possible. 5. Playgrounds should be provided for exercise and amusement. 6. In villages, or where there is a basement, play rooms can be arranged. In rural houses, without basements, a shed should be provided for exercise in inclement weather. 7. There should be plenty of pure water supplied for drinking purposes. 8. Buildings should be so located as to secure the best light. Particular attention should be given to this in villages where the school-house is likely to be surrounded by other buildings. 9. Care should be taken when the building is of wood to make it warm. This can be done either by using thick building paper under the clapboards, or by filling the space between the outside boarding and the lath with clean dry sawdust. 10. The walls of the rooms should be light gray or buff color. 11. All doors should be hung to swing out, and in large school buildings proper fire escapes should be provided. 12. As forty pupils are as large a number as one teacher can well instruct, the rooms should be 32 x 28 x 12 feet high, giving from 200 to 300 cubic feet of air space and 20 square feet of surface area for each pupil. 13. The windows should be numerous, large enough, and so arranged as to give ample light to every part (and corner) of the room. The window space should be at least one-fourth of the floor space. There should be no more space between the top of the window and the ceiling than is required to finish the building, and the window sill should be four feet from the floor. The light should be arranged so as to fall upon the pupil from the left or left and back, never from the front. There should be curtains of a gray or buff color for all windows—two to each window—hung in the center of the window so that either the upper or lower half, or both, can be shaded. 14. If there is no cellar under the building, there should be a space of at least two feet from the floor to the ground, and there should be windows or openings in the underpinning so that there can be a free circulation of air. 15. If the corridors are used as coat rooms they should be well lighted and ventilated. 16. In rural portions of a town, there should be two out-buildings—one for girls and one for boys. They should be at least twenty feet from the school building and from each other, with a high fence between. Earth closets should be used with road dust, sawdust or ashes, so arranged that they may be easily cleaned. In villages where water is available, there should be a system of bowls, urinals, drains and sewers, constructed according to modern plumbing rules. Closets should not be placed in basements under schoolrooms. 17. Desks and seats. The height of the seat must correspond with the length of the legs below the knees. The seat may be horizontal or slightly curved. The back should be formed of a lower convex and a upper concave portion. A desk for writing should have an inclination of about 15 degrees. The desk

should be fitted to the pupil each year. A perpendicular line from the edge of the desk should project only slightly over the edge of the seat. 18. Blackboards should be placed opposite windows, never between, and should be of a dark lusterless color. Lessons placed on the board for pupils to copy are injurious to the eyes by reason of the rapid change of focus required from the distant board to the paper on the desk; hence, these should be avoided.

NEW INSTRUMENTS.

EXTEMPORE SPINAL CORSET FOR POTT'S DISEASE OF THE SPINE.

LOUIS KOLIPINSKI, M.D.
WASHINGTON, D. C.

I have for some years used an extemporaneous spinal corset in place of Sayre's plaster jacket and the expensive spinal supports of the instrument makers, which possesses some advantages and may at times be found useful to others who encounter chronic diseases of the vertebral column.

The corset about to be described I have found always adequate to relieve the indications presenting in these cases; pain and impaired mobility of the trunk and lower extremities and consequently it can be passed without question of fulfilling the requirements of a mechanical support.

To prepare the corset a pattern is first made by means of a newspaper and scissors, arranging the former in a manner to fit the thorax and abdomen so that below, it slightly overlaps the iliac crests, meets edge to edge in front and extends upward two inches below the clavicles. Semicircles are cut on both sides to allow free room for the axillæ.

The material used for constructing the corset is the article called "Japanese splasher," in common use as a wall protection about a lavatory. The particular form of "splasher" is that of German manufacture and consists of slender round pieces of wood of the diameter of a common lucifer match. Two are sufficient for a child or a patient of average figure. The "splasher" is readily cut with scissors to the shape and size of the paper pattern. The inner surface of the jacket is lined with cheese cloth and the edges bound with broad tape. The external surface is further reinforced by transverse strips of tape four to eight in number, secured with stitches which are passed through and across the inner cheese-cloth lining. To apply the corset it is necessary to pad pressure spots which will be found along the spinal column, the armpits, the anterior abdominal wall, the hips and sometimes the mammary and sternal regions. Cotton or cheese cloth may be used hereto varying with the seasons.

The patient lies supine with the spinal column fully extended, the corset is slipped on and secured by means of three circular straps of leather or broad tape. The first one around the upper part of the jacket, the second about the middle and the third at its base. The last must bring the jacket snug in apposition with the iliac crests as the fixed point. The uppermost one is secured as tightly as the patient's respiratory freedom may demand, the middle one must be the most secure of all.

The corset thus designed fulfils the indications previously mentioned and has I believe some obvious advantages, which are, cheapness of material, lightness, elasticity, porosity and the fact that it can be made in a few hours by any female member of a family from the physician's verbal description.

MISCELLANY.

Correction.—"The Diagnostic Significance of *Enzymes* in Cyst Fluid," published in the JOURNAL May 8, page 885, was by mistake headed under the title of "Eczema!"

Warning!—Advertisers are cautioned that the program is copyrighted by order of the ASSOCIATION, that no advertisements appear in the official program and that any representations to the contrary are fraudulent.

Illinois State Medical Society. — The following were elected officers of the Illinois State Medical Society: J. M. G. Carter, M.D., President; T. J. Pitner, M.D., Vice-President; J. T. McAnally, Second Vice-President; E. W. Weiss, Secretary; Geo. N. Kreider, Treasurer. Next place of meeting, Galesburg.

The Most Important Discovery.—The University of Würzburg accords the distinction of having made the most important discovery during the past three years to Professor Behring, for his diphtheria antitoxin, and has bestowed upon him a gold medal and a purse of 1,000 marks.

Good Assumptions for Hypothetical Questions.—Hypothetical questions may be framed, the supreme court of Colorado holds, Courvoisier v. Raymond, Sept. 21, 1896, upon the assumption that the evidence tends to prove certain facts, this assumption being within the probable or possible range of the evidence.

Ferratin is one of the new remedies recommended by the committee of revision for adoption into the new fifth edition of the Russian pharmacopeia (*Chemiker Zeitung*, 31, 1897). It is an organic iron compound, of albumin and tartrate of iron, forming a definite iron albuminic acid; it contains 7 per cent. of iron, is readily absorbable, does not constipate and has no untoward effects. On the testimony of its discoverer and others, it is identical with the natural ferruginous element of food, absorbable in the system and stored in the liver and other organs as a "reserve iron for blood formation."

Niemann's Tuberculosis Antitoxin.—Niemann states that he has succeeded in isolating an antitoxin from the serum of young goats that had been inoculated with increasing doses of a tuberculin prepared from a virulent culture of tubercle bacilli. From experiments on guinea-pigs, in which tuberculosis had been produced by inoculation, he claims to have demonstrated that his goat's serum contains an antituberculin. Animals showing tuberculous ulceration at the seat of inoculation, with tuberculous enlargement of the glands, were cured by inoculating them with the goat's serum, the ulcer healing and the glandular enlargement entirely disappearing. Niemann also obtained good results in the treatment of tuberculosis of moderate severity in human individuals. Under treatment the general condition of the patients showed marked improvement, the tubercle bacilli disappeared from the sputum, and the cough and expectoration considerably diminished. High elevation of the temperature rarely followed the injection of the serum, even in large doses, while albuminuria was never observed.—*Münchener med. Wochenschrift.*

Drugs in Department Stores.—The appellate division of the New York Supreme Court gave an important decision regarding the rights of department stores to sell drugs without the supervision of a registered pharmacist. The decision was in a test case brought by the Pharmaceutical Society of Kings County. The individual members of a firm had been found guilty in a police court of a misdemeanor in selling a bottle of paregoric and a bottle of quinin. Their conviction was affirmed by the county court, and its decision is now upheld by the appellate division of the supreme court, which denies the contention of the defendants that they occupy a position similar to that of wholesale dealers by selling medicines in original packages, and that hence they should not be required to make their sales under the supervision of a registered pharmacist. The court held that the law was devised for the protection of the community at large, and that serious damage may be done if the law is not strictly observed. Hence it appears that if the department stores desire to sell drugs they must do so through the instrumentality of registered pharmacists.

The Latest in Roentgen Photographs.—Kümmel has traced with the Roentgen ray the course of the Murphy button through the organism. Syndactylia in a child was successfully treated with information derived from paternal photographs. Stechow thinks the importance of this photography in army surgery can not be too highly estimated. Levy Dorn locates foreign bodies with extreme precision by passing a needle around the

part, held behind the fluorescent screen. The two points at which the shadow of the needle coincides with the shadow of the foreign body are marked on the skin. Repeating this in two or three different positions the position of the foreign body can be found exactly. Another method is by moving the light slightly and thus taking stereoscopic photographs. Max Levy reports that it is now possible to take photographs of the thorax and pelvis with an exposure of only thirty to sixty seconds. The time has been thus shortened by obtaining a more complete vacuum, laying a supplementary screen over the sensitive plate and by using specially prepared plates with the sensitive film twice and four times the usual thickness.—Congress of Surgery, Berlin, April.

In Nature of Hearsay Evidence.—In the personal injury case of Thompson v. Manhattan Railway Company, where it was desired to prove that the plaintiff suffered from an injury to the spine, the attempt was made to prove that fact, not by the testimony of the physician who had attended her, but from the treatment that she received. Such proof, the appellate division of the supreme court of New York thinks, was in the nature of hearsay. The treatment of the plaintiff for a particular disease, it maintains, was no more than a declaration of the physician that she was suffering from such a disease; and as the declaration would not be competent, the court holds, Dec., 31, 1896, that the proof of the treatment was not competent. Nor does the court think that the jury could infer from the particular treatment what the belief of the attending physician was, because, while the witness on the stand might have given the specific treatment for one ailment, the attending physician might have given it for another. Further, it says, had the attending physician been produced as a witness on the trial, the vital inquiry would have been what at that time he believed to be the nature of the injury to the plaintiff, not what had been his view or belief on that subject at any previous time. And for that reason, his previous belief of treatment would not have been competent, except on cross-examination.

Examining Physician only an Agent.—An examining physician employed by a life insurance company examined an applicant for insurance on January 30, and on February 4, returned to the company a certificate that he had found the insured to be in sound health. February 11, the company issued a policy containing the provision "that no obligation is assumed by this company prior to the date hereof, nor unless on said date the insured is alive and in sound health." It was subsequently contended that the company was bound by the examination made and reported by its examining physician, and that it should not be allowed to prove by another physician that the insured was not in good health when the policy was issued. But, aside from the possibility that the insured might have been in good health January 30 and not on February 11, the supreme judicial court of Massachusetts holds, Gallant v. Metropolitan Life Insurance Co., decided October 23, 1896, that the examining physician was only the agent of the insurance company to make the examination, and report the result of it. He had no authority to make a contract of insurance for the company, in which the results of his examination should be conclusively taken by the company to be true. The company made its own contract, a part of which was as above. If, in fact, the insured at that time was not in sound health, the court therefore holds, the company was not liable on the policy, and this fact could be shown by any competent evidence.

The Effects of Small Caliber Bullets.—In an article under this title in the *Annals of Surgery*, January, 1897, Dr. Gwilym G. Davis of Philadelphia reviews the literature of this subject and discusses critically the various conclusions that have been reached by experimenters and observers. The effects produced by a bullet are penetrative or explosive. The former are directly proportioned to: The hardness of the projectile (non-deforming); the softness or elasticity and compressibility of the tissues; the velocity of the bullet; the small size or frontage of the bullet and lastly its weight. An increased velocity produces increased penetration only to a certain extent because the resistance to the entrance and passage of a bullet increases in a more rapid ratio than does the penetration, so that a point is soon reached beyond which any additional velocity is expended laterally on the tissues. The lateral or explosive effects are proportioned to: The softness of the bullet; the hardness and non-compressibility of the tissues; the velocity of the bullet; its large size or frontage; its weight and in a slight degree its rotatory motion derived from the rifling. The lack of disabling power has been observed in every instance in which the small calibers have been used in actual warfare, as in Chili, where the 7.6 millimeter Mannlicher rifle was used; in some of the contests of the British troops with the half-savage natives of their Eastern possessions in which the 7.7 Lee-Medford was used; in the Chinese war in which the Japanese used the Murata rifle of about 8 millimeters; in the Abyssinian campaign in which the Italian troops were armed with the 6.5 Mannlicher-Caveano, and in the present Cuban rebellion in which the Spaniards carry the 7 millimeter Mauser. In the recent fighting in South Africa the British troops were unable, by their rifles alone, to stop the onward rush of the natives and it was only the opportune assistance of the machine guns that saved them from being overcome. The Italians in their campaign against the Abyssinians were not so fortunate. The disabling effect of their 6.5 bullet was so slight that it was thought the ammunition had been tampered with. Dr. Davis submits ten conclusions as the result of his study; 1. That the initial force of the bullet is an onward or a penetrative one. 2. That when penetration is impeded the onward force becomes transformed into a lateral one. 3. That explosive effect is only another name for lateral action, *i. e.*, outside the track of the bullet. 4. That lateral action is most marked in hard bones (the fragments being carried onward) and in organs containing water (bladder, brain, liver, etc.). 5. That practically the rotation of the bullet on its axis does not materially affect the character of the injury. 6. That the effect of gunshot wounds is not so severe on the living body as on the dead. 7. That the destructive power of the small caliber arm has been overestimated. 8. That its stopping or disabling power is less than that of larger calibers. 9. That wounds in future conflicts will be, as a rule, less severe and healing more rapidly, with fewer complications than has been the case in the past. 10. That less radical treatment will be required and conservatism will be followed by most brilliant results.

Detroit.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting Monday, May 3, listened to a paper by Dr. Charles Douglass, entitled "Infantile Stools and Their Significance." The paper was discussed by Drs. Chapoton and Jennings.

THE DETROIT COLLEGE OF MEDICINE graduated eighty-one M.D.'s Tuesday evening May 4. This was the twenty-eighth anniversary of the college, which is in a prosperous condition. The damage done by the late fire to the main building is now being rapidly repaired. It being necessary to alter all the interior of the building, the corporation has added another half story.

AT THE COMMENCEMENT EXERCISES of the Michigan College of Medicine, held March 23, forty-seven gentlemen received their diplomas.

The MEDICAL BILL which was before the Michigan legislature met its death. Dr. Edgar, a member of the House from Lenawee, amended the bill, but it was defeated in the House by eleven votes, a majority of the Wayne County (Detroit District) members voting against it.

Washington.

THE ANTI-VIVISECTION BILL REPORTED TO THE SENATE.—Senator Gallinger has reported the bill to regulate vivisection in the District of Columbia. The bill received the unanimous approval of the District committee of the Senate, and is a modification of the bill presented at the last session of Congress. He accompanies the bill with a very full report which discusses the subject for and against the bill from the evidence presented to the committee. He appends a most impressive list of names of some of the most influential people in the country, who favor and urge the passage of the bill. It is very plain that the efforts of the vivisectionists to defeat the bill have attracted unusual attention to this measure, thus arousing a large opposition from very prominent persons who evidently do not clearly understand the situation, but whose expressed wish and great numbers have influenced the Senate committee. (A timely

attack might yet defeat the measure.) The bill provides: 1. For the use of anesthetics in all painful experiments on living vertebrate animals, the so-called inoculation experiments, tests of drugs and medicines and cases of recovery from surgical procedure being expressly exempted from this requirement. 2. For the licensing of all experimenters by the District Commissioners, except those who are duly authorized officers of the government of the United States or of that of the District of Columbia. 3. For the prohibition of vivisection in the public schools and in exhibitions for the general public. 4. For the inspection of all places of experiment by inspectors to be appointed by the President of the United States.

MEDICAL SOCIETY.—At the meeting of the Society held on the 12th instant, the discussion of the essay of Dr. W. W. Johnston on "The effect of School Life on the Health of Children." Dr. Busey: The influence of premature school life on the health and development of children. Dr. S. S. Adams: Some of the causes of so-called school diseases found in the home. Dr. Kober: Many of the causes of so-called school diseases found in the school. Dr. Woodward: The sanitary condition and needs of Washington schools. The discussion was on motion continued to the regular meeting next week, when other members will speak on the subject.

MEDICAL ASSOCIATION OF THE DISTRICT.—At the meeting of the Association held on the 11th inst., Dr. C. Busey was unanimously elected the delegate to represent the Association of the District of Columbia at the meeting of the British Medical Association, to be held at Montreal. The following was adopted as a part of the by-laws of the Association and made binding on its members:

1. That every institution for medical charity shall require from every applicant for relief in a hospital or dispensary, a written certificate to be obtained as hereinafter provided. Emergency cases are to be excepted from the operation of this rule. 2. That such certificate be obtained from Physicians to the Poor, the Board of Associated Charities and any registered physician. 3. That cases of sick and injured persons found upon the streets, in the stations or elsewhere, who require immediate treatment, shall be carried to the Emergency Hospital, or the nearest hospital having an emergency service, or to their homes, if so directed by the patient or his friends. 4. That emergency patients shall not be detained longer in such institutions than the necessity of the case imperatively demands, but shall be discharged from the service and sent to their homes or to some public hospital as the patient may elect. 5. That members of this Association shall be entitled to the privilege of attending private patients occupying private rooms in any of the public hospitals of this city. 6. That in future the members of the Medical Staff of hospitals when attending medical or surgical cases in private pay-rooms shall insist upon proper payment for their services, except in the case of such patients who are clearly unable to pay for same. 7. That whenever the Medical Staff or a majority thereof of a hospital or dispensary resigns, and when after due hearing, this Association finds that the resignations were for just and sufficient cause, it shall be forbidden for any member of this Association to accept a position on the staff of said hospital or dispensary. 8. That whenever one or more members of the Medical Staff of a hospital or dispensary are dismissed, and when after due investigation, this Association finds that such dismissal was without just and sufficient cause, it shall be forbidden for any member of this Association to fill the vacancy created thereby. 9. That complaints made under Rules 7 and 8 shall be made in writing to the Standing Committee, which after due consideration shall report its findings to the Association.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 8 to 14, 1897.

Capt. R. R. Ball, Asst. Surgeon U. S. A. (Ft. Adams, R. I.), is granted leave of absence for one month, with permission to apply for an extension of two months.

Capt. Nathan S. Jarvis, Asst. Surgeon, leave of absence granted is extended to July 1, 1897, at which time his resignation has been accepted by the President to take effect.

First Lieut. Guy C. M. Godfrey, Asst. Surgeon, now on temporary duty at St. Paul, Minn., will proceed on the 15th instant to Ft. Yellowstone, Wyo., and report to the commanding officer for temporary duty with troops in the National Park during the season.

First Lieut. Paul F. Straub, Asst. Surgeon, is assigned to duty with Troop C, Fourth Cavalry, during the season at Segaoia National Park and General Grant National Park, Cal.

Capt. Merritte W. Ireland, Asst. Surgeon, is assigned to duty with Troop K, Fourth Cavalry, during the season at Yosemite National Park, Cal.

Col. William H. Forwood, Asst. Surgeon-General; Major Louis M. Maus, Surgeon; Capt. Rudolph G. Ebert, Asst. Surgeon, are detailed to represent the Medical Department of the Army as delegates at the annual meeting of the American Medical Association, to be held in Philadelphia, Pa., June 1 to 4, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending May 8, 1897.

Surgeon A. G. Cabell, ordered to the "Monongahela" May 15.

Surgeon D. H. Morgan has been detached from the naval academy and ordered to the "Monongahela" May 15.

Asst. Surgeon R. G. Brodrick, ordered to examination for promotion May 8.

Asst. Surgeon F. C. Cook, detached from the "Vermont" May 8 and ordered to the "Wilmington" May 10.

Medical Inspector J. C. Wise, detached from marine headquarters, Washington, May 15, and ordered to Columbus, Ohio, as delegate to the Association of Military Surgeons.

Medical Inspector J. C. Wise, after duty at Columbus, ordered to the "Philadelphia" as fleet surgeon.

Medical Inspector J. A. Hawke, detached from the "Philadelphia" on relief, and granted three months' leave.

P. A. Surgeon C. H. T. Lowndes, ordered to duty at marine headquarters.

Surgeon C. U. Gravatt, ordered to U. S. S. "San Francisco" (fleet) per steamer of May 22.

Medical Inspector H. J. Babin, detached from the "San Francisco" on relief, ordered home and granted three months' leave.

P. A. Surgeon G. T. Smith, ordered to the naval hospital, New York, temporarily, May 15.

Asst. Surgeon M. S. Elliott, detached from the "Columbia" and ordered to the "Indiana."

Medical Inspector J. M. Flint, ordered to examination for promotion, Washington, May 12.

CHANGE OF ADDRESS.

Brothers, S., from 93 to 244 Madison St., New York, N. Y.; Barbat, J. H., from 1412 Folson St. to 700 Golden Gate Av., San Francisco, Cal.; Brown, H. L., from 800 Monroe Av. to 508 Congress St., Chicago, Ill.; Bouffeur, A. I. from 788 to 1178 Washington Boul., Chicago, Ill.; Booth, F. H., from 522 N. Sacramento St. to 857 W. North Av., Chicago, Ill.; Brauns, E., from 341 Roscoe St. to 11 Cleveland Av., Chicago, Ill.; Beach, W. M., from Pittsburg to 89 Arch St., Allegheny, Pa.

Cook, J. C., from Hyde Park to The Kenwood, 47th St. and Kenwood Av., Chicago, Ill.; Clausen, J. J., from 1327 E. 8th St. to 1400 Summit St., Kansas City, Mo.; Conner, R. E., from New Florence to Hickory, Pa.; Cheshire, M. U., from 828 Congress St. to 195 S. Oakley Av., Chicago, Ill.

Devine, G. C., from 277 S. Lincoln St. to 430 S. Wood St., Chicago, Ill.; Dean, G. S., from 2486 Market St. to 1039½ Valencia St., San Francisco, Cal.; Davidson, Charles, removed office to Suite 1007 Columbus Memorial Building, Chicago, Ill.

Greenebaum, E. C., from 357 S. Lincoln St. to 468 E. 42d St., Chicago, Ill.; Greensfelder, L. A., from 3000 Indiana Av. to 3500 Ellis Av., Chicago, Ill.; Gilbert, J. W., from Verona to Corinth, Miss.; Grinstead, J. F., from Chicago to cor. 4th and Washington Av., St. Louis, Mo.; Goodman, C. W. T., from 708 S. Michigan Av. to 508 N. Washington Av., Saginaw, Mich.

Houston, Jas., from Swartz Creek, Mich. to 2d Av. and 20th St., New York, N. Y.; Hanna, C. W., from Zanesville to 807 Gay St., Portsmouth, Ohio; Hill, F. E., from 7 to 10 W. 9th St., Cincinnati, Ohio.

Kaster, J. P., from Albuquerque, N. M., to Topeka, Kan.; Kirkbride, M. F., from Philadelphia, Pa. to Spring Lake Beach, N. J., P.O. Box 205.

McDaniel, E. D., from Mobile to Camden, Ala.

Peck, Geo., from 926 N. Broad St. to 340 Westminster Av., Chicago, Ill.

Reynolds, Geo. W., from 315 Webster Av. to 1924 Arlington Pl., Chicago, Ill.; Russell, E. S., from Pittsburg, Pa. to Alliance, Ohio.

Schaper, Chas. S., from Franklin to 1304 N. 8th St., Sheboygan, Wis.

Van Velser, Frances T., from 2480 Indiana Av. to 6059 Ellis Av., Chicago, Ill.; Wyeth, John A., from 27 E. 38th St. to 19 W. 35th St., New York, N. Y.; Wright, J. C., from 1330 27th St. to 2414 Kingman Av., DesMoines, Iowa; Wills, Wm. L., from 127 W. 1st St. to 306 Wilcox Block, San Francisco, Cal.

LETTERS RECEIVED.

American Therapeutic Co., New York, N. Y.: Armstrong-Hopkins, S., Chincoteague, Va.; Alma Sanitarium Co., Alma, Mich.

Bovee, J. Wesley, Washington, D. C.; Boehringer, C. F. & Soehne, New York, N. Y.

Colvin, J. P., New Castle, Ala.; Chambers, J. H. & Co., St. Louis, Mo.; Cokenower, J. W., DesMoines, Iowa; Connor, Leartus, Detroit, Mich.; Coplan, M., Cleveland, Ohio; Cushing, E. B., Chicago, Ill.

Doble, Ernest E., San Francisco, Cal.

Elliott, A. R., (2) New York, N. Y.

Featherstone, J. S., Macon, Miss.; Fairchild Bros. & Foster, New York, N. Y.

Graham, J., Miss, Wauwatosa, Wis.; Galbraith, T. S., Seymour, Ind.; Gaertner, Prof., Mother-Milk, New York, N. Y.

Hanson, F. A., Abrams, Wis.; Hummel, A. L., Advertising Agency, (2) New York, N. Y.

Johnson & Johnson, (2) New Brunswick, N. J.; Jones, W. G., Chicago, Ill.; Journal Advertising Agency, New York, N. Y.

Klie, G. H. Chas., (2) St. Louis, Mo.

Leffman, W. S., Philadelphia, Pa.; Litzenberger, O., Converse, Ind.; Lehn & Fink, New York, N. Y.; Liston, G. M., Filley, Mo.

Mills, James, Janesville, Wis.; Milliken, J. T. & Co., St. Louis, Mo.; Merriam, G. & C. Co., Springfield, Mass.; Medical & Surgical Reporter, Philadelphia, Pa.; Miller, E. B., Malta Bend, Mo.; Martin, John C., Kansas City, Mo.; Manley, Thomas H., (2) New York, N. Y.

Nippert, L. A., Minneapolis, Minn.

Potter, William Warren, Buffalo, N. Y.; Parke, Davis & Co., Detroit, Mich.

Rice & Rice, (Drs.) Kearney, Mo.; Reichel, Curt Victor, Chicago, Ill.

Scheiffelin & Co., New York, N. Y.; Schering & Glatz, New York, N. Y.; Spreckelmeyer, G. A., Lange Store, Mo.; Sickels, E. A., Dixon, Ill.; Shuey, J. J., Corning, Mo.; Strout, Eugene S., Minneapolis, Minn.

Tittsworth, B. M., Shady Grove, Tenn.

Upjohn Pill & Granule Co., Kalamazoo, Mich.

Way, Eugene, Dennisville, N. J.; Walesby, A. E., Louisville, Ky.; Wilber, A. M., West Unity, Ohio; Watkins, Garland, Carrollton, Ark.; Wheaton, O. M., Lincoln, Neb.